AMERICAN AGRICULTURIST,

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

ORANGE JUDD, A.M., EDITOR AND PROPRIETOR. Office, 41 Park Row, (Times Buildings.)

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American Agriculturist in German.

Each number of this Journal is published in both the English and German Languages. Both Editions are of the same size, and contain, as nearly as possible, the same Articles and Illustrations. The German Edition is furnished at the same rates as the English, singly or in clubs. A club may be part English, and part German.

Notes and Suggestions for January.

It is with no empty words that we wish our largely increased circle of readers A HAPPY NEW-YEAR. Believing that earthly enjoyment can nowhere be attained more certainly, or in higher degree, than in the peaceful avocations of Agriculture, and feeling assured that its *intelligent* pursuit will bring added pleasure, we may confidently expect that our efforts to gather and impart information in this sphere will tend to *make* it a happy year. Cheerfully then we commence another volume, the more so because past efforts have met such generous appreciation.... Winter, no less than Summer, has its husbandry. The *growths* of this season, though not so attractive as the foliage which ornaments the landscape under a more fervid sun, are as marvelous, and, to the close observer of Nature, as interesting as the productions of Summer. What can surpass the work of the frost during a single night? The blade of grass, the forest leaf, and the gay flower, require days and weeks for their development; but now, a single hour will call forth myriads of forms which the most exquisite art can scarcely imitate. Jewels sparkle upon every tree and shrub and spire of withered grass, needle-like crystals of delicate proportions adorn even the wayside pools, and fairy creations which no human artist could ever imitate, decorate with lavish profusion the window pane of the humblest cabin. These productions of Winter require no oversight from man, except to limit their development. He must fortify himself and his surroundings against the benumbing cold, and wait the more propitious days of the advancing year before commencing operations in the field. But this freedom from pressing out-door employment gives opportunity for culture that may yield a richer harvest than was ever gathered with sickle or reaper. It is the season for the thought-crop—for collecting stores of knowledge, for enlarging the mind's wealth by gathering the recorded experiences of others, and for increasing executive power by carefully digesting the facts and observations found in appropriate books and journals. The files of the *American Agriculturist* will well repay a second reading, by recalling forgotten topics, or presenting facts unnoticed during the busy season of out-door operations. Facts gathered in reading will be better appreciated and longer remembered, by discussing them with others. New light will be thrown on a subject when viewed by different minds, and one's own apprehension will be quickened by friendly conversation. To this end the Farmers' Club is a most valuable institution, which should be kept up in every School District throughout the country. Were these clubs properly maintained, and concert of action secured among them, Agriculture would be advanced with incalculable rapidity. Information could at once be had of the adaptation of different crops, fruits, methods of culture, etc., to different localities; decisive experiments on important subjects might be made; reliable statistics of crops gathered for the common use; and many other benefits which will suggest themselves to the thoughtful mind, be derived by such general organization. As the first step in this direction, let every reader of these pages become a self appointed committee to sustain the club in his own neighborhood; when a sufficient number are in operation, it will be comparatively easy to bring the separate societies into one great circle. Even if the latter result be not attained in many years, every neighborhood will be amply repaid for sustaining such an institution, in the immediate results to those who take part in it.

Work for the Farm, Barn, and Stock Yard.

Accounts, Inventory.—It matters little whether one is familiar with book-keeping or not—the accounts may still be correct: every man knows the difference between money spent and money received, between that due him and that which he owes. Let these differences be set down in a perfectly clear manner, and be able at any time to foot up these four columns. Besides, it is necessary to know what one is likely to receive, the expenses soon to be incurred, and obligations to be met. Every man should have a full memorandum of these things, and in order to begin the year well in a business point of view, every farmer should take an inventory of all his property. This will enable him to keep all future accounts much more satisfactorily.

Agricultural Reading.—At least one good agricultural journal should be received in every farmer's family. There are many new books, and old ones too, which every reading farmer should have. Several were noticed the past year in the *Agriculturist.* See list on another page.

Buildings.—Keep tidy; consider plans for improvements; paint in warm, dry spells, and do not neglect or defer little repairs which save the expense of greater ones. A stitch in time, etc.

Cellars.—Exclude the frost by banking up additional earth around the foundation walls. Open them on warm dry days to change the air.

Cows.—Feed well and give warm shelter, especially to cows in calf. Dry off before the new milk springs. Occasionally clean the skin and coat with card and brush. See December notes.

Dairy.—Propose the subject of Associated Dairies in the Farmers' Club. See page 15. Care and carrots will make winter butter yellow.

Debts and Dues.—Collect dues and pay debts. Remember that the best time to *pay off* debts and mortgages is when the currency is inflated.

Eaves.—There is often a deposit of leaves and dirt in eaves troughs. This is loosened up by the frosts, and during a "January thaw" will be washed into the cistern if not removed.

Farmers' Clubs.—There is an old proverb, that "two heads are better than one." Did farmers only realize how much a general improvement in agriculture in their own neighborhood would promote their own personal advantage, they would put their heads together much more than they do, and each School District would sustain an active Farmers' Club.

Fencing stuff is best cut when the sap is in, from June to September. The Winter is the proper time to work up the logs into rails, posts, etc.

Frost.—Pumps and hydrants may be kept from freezing in the severest weather, by setting a headless barrel around them, and filling it with horse dung, mixed as usual with some strawy litter. Fence posts, etc., will be less heaved by frost, if a handful of salt be sprinkled around each, on the surface of the ground.

Grain.—Have all grain early thrashed and stored in clean, dry, rat-proof granaries. Clear out rats and mice from granaries by phosphoric salve or other poison. Corn keeps best in the ear.

Harness.—Overhaul harness on damp days, especially after it has been wet. First wash with Castile soap; then grease with neats-foot oil. Treat carriage tops in the same manner.

Horses.—All in use should be well shod and sharp. Be very careful if mares in foal are allowed to leave the stable in slippery weather. Many a fine mare has been spoiled by slipping down. A foot of light snow offers a good opportunity to break a fractious colt to saddle,

or harness if he is taken where he will not slip. Always be gentle with colts and get them accustomed to be handled and to like your presence. A few carrots fed daily are very valuable for horses at this season and through the Winter.

Ice.—Fill the house early. See another page.

Liquid Manure—is one of the most valuable products of most farms, and it is too often entirely lost. Use absorbents freely, straw, muck, etc., with the addition of gypsum in case of heating.

Manure.—Heaps of rapidly fermenting manure (as horse dung) will fire-fang even in mid-winter. Work it all over, adding muck, soil, loam or even sand, and mix well. Sprinkle gypsum or a solution of green vitriol where strong fermentation occurs.

Markets.—Few farmers can afford to hold their produce for a higher market after a good price is offered. Prices are usually higher in Spring, but corn and all grain shrinks from loss of water, from the ravages of vermin, and from actual waste, enough to make the gain very little.

Oxen, like horses, should be kept sharp-shod. They ought to be stabled, well fed, and not overworked. Letting cattle get "spring poor" just before spring plowing is bad for them and the farm.

Plowing.—It is worth while to plow whenever the ground is open enough, and it not unfrequently happens that it is so in January, especially below lat. 41°. Spring work is advanced by just so much.

Poultry.—See article on page 22.

Roads and Paths.—It is for the interest of the whole community that after snow storms the roads be promptly opened. Every good citizen will volunteer to do his part with shovels, snow-plows, etc., to break paths and establish neighborly intercourse.

Roots should not be carelessly fed out; they are so excellent a corrective that carrots, wurzels and rutabagas should be kept through till grass. All pregnant animals, and all with constipated bowels should receive a daily allowance.

Seeds of all kinds should be free from dampness, and have more or less change of air. An old rat trap, or a box made of wire cloth, or an old tin pan or pail covered with the same are adapted to the purpose.

Sheep.—Shelter from rains and storms, but do not confine them to close sheds unless fattening.

Steers.—Look out and get good mates for your steers, if your herd does not supply them; spend some time daily, not *breaking*, but training them.

Swine—Should have a place under cover, where by working over the litter and manure of the stables, or muck and straw thrown to them, they will be preparing a good supply of manure for use.

Timber Land.—Winter is the time to cut firewood, and this should be done, where timber has considerable value, by selecting the crooked, hollow trees, having reference to giving young trees and those valuable for sawing, etc., more room.

Tools and Implements.—Discuss new and improved kinds in the club and with your neighbors.

Water.—See article on another page.

Workshop.—Any farmer not having a well stocked workshop should at once provide it. See "Basket."

Orchard and Nursery.

In this, as in the other horticultural parts of the Calendar, we might refer to the notes of last month, were it not for the great number of readers who will look over these pages for the first time. It is expedient to have the Calendar for the year complete in itself, and we therefore suggest what few things are to be done during the present month.

The orchard should be visited occasionally to see that all is going on well. A defective fence, or a gate carelessly left open, may be the cause of serious injury to young trees. All kinds of stock will browse on the young shoots or gnaw the bark of trees, and they are to be carefully excluded.

Tramp down the snow around young trees to keep off mice, and set traps for rabbits. In the basket columns a note will be found upon a composition said to be useful to girdled trees.

If limbs are broken down by the wind or by an accumulation of ice and snow, pare the wound smooth and cover it with waxed cloth (described on page 20) to exclude the weather.

Water should not be allowed to stand around the trees; open surface drains whenever it can be done.

Cions may be cut at any time during mild days. Label every variety with great care, and preserve them from drying by burying in earth in the cellar.

If it is intended to plant trees in the Spring, send to the most reliable nursery within reach for catalogues, and send in orders to be filled at the proper season, or, what is vastly better, go in person if possible to do so, and select the trees. Consult freely with fruit growers in the neighborhood, and find what has been their experience with the different varieties. Avoid novelties, or at most touch them cautiously. Give irresponsible tree peddlers a wide berth. When the condition of the soil will permit, it is well to open the holes for trees to be planted next Spring, as the action of frosts will ameliorate and improve the soil. The nurseryman will probably be unusually busy next Spring, and he should have an ample supply of labels, packing materials, and every thing that will facilitate his operations.

Let every farmer follow our repeated advice to make a permanent map of his orchard and mark the place of every variety. Labels soon perish.

Manures should be procured and hauled to places where they will be needed for use in the Spring.

Root grafting may be done. See plain directions for the operation on page 20, of this paper.

Kitchen Garden.

A gardener's immediate work is always done with a view to future results. He plants and sows, and then awaits the returns. Give the comparative leisure of the present season to thinking and planning to be realized at a future day. Everything that can done now to save a day's or an hour's work in the busy spring months should be done. In market gardens especially, a few days earlier or later often decide the success of a particular crop. Now is the time to determine what to sow and where to sow it, as well as to provide seed in season. The new stock of the seedsmen is usually ready by February, and it is well to get a supply at once, as desirable kinds are often soon exhausted.

Cold Frames, will need care, giving air whenever the weather is mild, and extra protection when it is severe. Have shutters, straw mats, or even old blankets and comforters at hand, to throw over during a very cold spell. Bank up the frames as another security against cold.

Hot Bed Frames and Sashes.—Make all ready in time; strengthen old frames; glaze and paint sash, and if new ones are required, have them made in season. If a stock of fine rich mould is not ready, secure it at the first opportunity and keep under cover, otherwise when wanted for the beds it may be frozen or too wet.

Manure.—Abundant manuring is the secret of good gardening. "Get all you can and save all you get" should be the rule; add muck to the barn-yard, privies and piggeries, and thus increase the supply. Manure may be drawn to where it will be needed.

Poles for beans, brush for peas, and stakes of all kinds should be cut while the swamps are frozen. It is poor management to wait till they are needed.

Seeds.—See that no mice have access to them. Keep none of doubtful quality.

Tools.—Make all needed repairs, and if you have never enjoyed the comfort of a tool house, arrange a place where every implement shall have its assigned place, and keep it there when not in use. It will save a deal of vexation.

Fruit Garden.

It is presumed that all required winter protection has been given. If the grape vines have not been laid down, remove them from the trellises and cover, the tender kinds at least, with earth. The perfectly hardy sorts will be more fruitful if simply laid upon the ground without covering, than if they are left upon the trellis and exposed to the action of the cold winds. See that the covering of earth given to raspberries is not washed away by heavy rains. Manure may be put around the roots of trees when the ground is not frozen. Make plans for new plantings, and consult catalogues and send in orders to nurserymen as soon as the selection of varieties is determined upon.

Flower Garden and Lawn.

The work here is mainly in-doors, and the brain rather than the hands are engaged. The winter months are the time in which to project improvements. We have so frequently suggested the necessity for working from well matured plans drawn on an accurate scale, that it must be well impressed upon all our old readers. To new ones we say, if you design any improvements, make them first on paper, where they can be more easily altered than when done hap-hazard upon the ground. Shrubbery which is too thick can be thinned, and where trees are so crowded as to interfere with the development of one another, the least valuable should be removed. In favorable seasons some work can be done at making walks and drives. For a thoroughly made walk or road way, the earth should be removed to the depth of two feet and a foundation made of large stones, filling up with small ones, and finishing off with gravel, which is to be well rolled. Have a supply of stakes and labels ready for spring use. Jar the evergreens after a heavy fall of snow, and free the lower branches from snow drifts.

Green and Hot-Houses.

In the green-house, where plants are kept in a state of rest only, the temperature should be as even as possible. It should never get higher than 50° or 55°, nor lower than 35°. Plants kept here will require ventilation whenever the weather is mild, and but little water. Cleanliness should be observed, and all decaying leaves removed. In houses where growing plants are kept, the temperature should be regulated according to the nature of the collection—65° to 75° being that which suits the majority of plants. The heat may be allowed to fall somewhat at night, but sudden changes and extremes are to be avoided.

Bulbs.—Hyacinths, etc., should be brought from a cooler to a warmer place, a few at a time, in order to keep up a succession.

Camellias.—Syringe the foliage and give more water to those commencing to grow. They require plenty of ventilation, as they are apt to drop their buds in a confined atmosphere.

Cactuses.—During winter these require but very little water; keep in a dry part of the house.

Calceolarius.—These are among the chief ornaments of the house at this season. To get a good bloom the drainage should be perfect. Shift growing plants to larger pots as soon as they need it.

Carnations.—Start cuttings for plants for summer blooming. They strike best in a rather cool place.

Fuchsias.—Cut back old plants to a good shape and re-pot them in good, fresh soil.

Insects.—These are now propagating rapidly, and the aphides, mealy bug, and red spider—the gardener's particular annoyances—demand attention. Thorough syringing will destroy many, but it may be necessary to persuade some of them to leave with tobacco smoke, whale oil soap, and the like.

Oranges and Lemons.—Give water sparingly and keep them in a cool but light part of the house. If affected with scale wash the trunk with soap suds.

Petunias and Verbenas.—Encourage them by shift-

ing to larger pots and bringing to the light, and a finer bloom will soon repay the trouble.

Shutters.—Now that fuel is so dear, much may be saved by the use of shutters, which can be kept on during nights and excessively cold days.

Ventilation must be provided whenever the outer temperature will permit. In cold weather avoid a draft and ventilate at the top of the house only.

Water should always be soft, and of the temperature of the house. Give freely to most growing plants. Succulent plants need but very little extra moisture, as their leaves evaporate very slowly.

Apiary in January.

Prepared by M. Quinby—By Request.

At the commencement of cold weather, the bees crowd closely together, in order to keep warm,—the whole colony often occupying less than one quarter of the combs. The cluster is in that part of the hive where there is no sealed honey, where the combs are thin, and where there are many empty cells, into which the bees creep. They pack themselves more densely as the weather grows colder. During this month many small swarms usually freeze to death. The larger ones generate moisture, that gathers on the sides of the hive and on the combs. Protracted cold weather will often cause this moisture to freeze, so that no combs or honey outside the cluster of bees can be reached by them. When they have consumed all the honey contained in the few open cells within the cluster, if this state of things continue, they must starve. Moderate weather usually supervenes in time to save them; but if it does not, the hives should be taken to a warm room for a short time, to melt the frost and give the bees an opportunity to reach the honey. The sun being allowed to strike the hive, will dissolve the most of this frost, even in severe weather. Some care must be observed that it does not run to the bottom and freeze again, and close the air passage. Raise the hive occasionally, at a time when there is no frost, and sweep out dead bees, dirt, etc. When mice have gained access, it may be known by the nibblings on the floor of the hive. They should be excluded by the means recommended last month. Sweep away snow from the alighting board lest it choke the entrances, except where sufficient falls to cover the whole hive, for then it will efficiently protect it from the cold. Bees in the house will only need looking to occasionally to see that no mice get at the hives.

Ventilating Corn Cribs.

"Farmer," Loraine Co., O., writes to the *Agriculturist* that a corn crib should stand well up from the ground, and be built as open as possible, so that the ears do not fall out, especially at the bottom. To provide thorough ventilation, when filling the crib, place billets of wood three to four inches in diameter, and two to three feet long on the floor of the crib, each directly over a crack or auger hole. As the corn rises, draw up the billets a few inches at a time, keeping the upper ends above the corn. When the crib is filled, take the blocks entirely out, but before doing so, place a few ears in position to prevent sliding in at the top. Every opening will remain as an escape pipe for moisture. In this simple manner good corn may be saved from becoming musty.

Tools for the Workshop.

"What tools does a green farmer want, who is something of a mechanic?" This question is asked by a young and not very green farmer, who perhaps wants to draw out the *Agriculturist*, on a hobby. For *one* the writer does not feel independent unless he has the means to do almost any little job of repairing that "turns up" unexpectedly. To this end he needs a cross-cut saw and a splitting saw, each of large size, a good bench axe, a claw hammer and a lighter one, a bit-stock and set of a dozen bits, an inch, 1⅛, and 2-inch auger, a set of rasps and files for wood and for metal, several chisels and gouges of different sizes, mallet, a square and compass, and a plumb rule, a two foot rule, a 40-foot tape line, 2 planes, 2 screw drivers (one to fit the bit-stock), 1 gimlet, 1 drawing knife, 1 oil stone, 1 mason's trowel, a cold chisel and punch, and two vises—one having 3-inch, the other 1¼-inch steel-faced jaws. With these and a carpenter's work bench, with a fixed vise attached, and a stock of nails and screws, one can get along very satisfactorily. There is occasionally furniture to be mended, and to this end one needs a glue-pot, a brad-awl and some brads. The tin-ware springs a leak now and then, and a soldering-iron (copper) and some sticks of soft solder, a lump of rosin, and a phial of soldering liquor (zinc dissolved in muriatic acid) are wanted. The harness gives way, or the seams in some leather work rip, and then one finds a little kit of saddler's tools, awls, wax, thread, some lace-leather, and a belt-awl, a rivet-set and copper rivets very convenient. A larger rivet-set and some iron rivets, with some hoop iron will enable one to make hoops for barrels, tubs and pails, without troubling the cooper. With brass, copper, and iron wires of various sizes, strong pliers, and cutting nippers, a vast number of broken things can be mended, and made strong as new. Now and then it happens that a horse is brought to the door with a shoe loose; anybody who can drive a nail, with a little practice can drive a horse-shoe nail; so add a few of these to the list. The light hammer will do to drive them, and a bit of iron a pound in weight, will serve to drive against in clinching. With the foregoing, one is quite above being annoyed by little accidents of that vexatious kind which cannot be provided against by any amount of foresight. Whenever there is real *work* to be done, always employ a mechanic. — "Ask us some more hard questions."

Spring Wheat Sown in January.

VALUABLE EXPERIMENT.—When an experiment is well tried, however much we may wish it to result so as to indicate profitable practice, we should remember it is equally successful as an experiment even if it shows that a certain practice will not be profitable. J. W. G. of Rockton Co., Ill., writes: "One of the correspondents of the *Agriculturist* wishes some one to communicate the results of sowing Fife Wheat in the Fall. I had a favorable opportunity to try the experiment, and on the second day of Jan., 1863, the ground being open, I sowed two bushels and one-half on a little over an acre. The ground was plowed, sowed, and dragged the same day; the *result* was the seed all rotted; none of it ever came up. Some of my neighbors have sown this wheat late in November, but in no case has it done any better than when sown in Spring, and often not so well. A coat of snow must lie on it all Winter to insure its success in any degree."

Notes from the Fruit Growers' Meeting.

Pruning Apple Trees—Keeping Grapes—The Diana Grape—Grape Culture—Knox's System—Manuring, etc., etc.

The weekly meetings of Fruit Growers at the *Agriculturist* Office, continue to be well attended, and much valuable information is elicited in the discussions. They are simply free conversational gatherings, where all who find it convenient, drop in and hear and talk about fruits and fruit culture, and exhibit any specimens they desire. The sessions last from 1 to 2½ o'clock on each Thursday afternoon. We have space for only a few condensed notes. At one of the meetings A. J. Coe, of Conn., asked for information as to the best hight for pruning apple and pear trees.

Dr. Ward said that if the branches are low, they are depressed each year with the weight of fruit, until they trail upon the ground. He trims his trees so high that the ground can receive a shallow plowing, with a small horse—uses Share's harrow, which he finds an admirable implement for stirring the soil for two inches in depth. He considers it necessary to have the branches so elevated that every portion of the ground shall get the sun's rays during a part of the day. It is acknowledged that we have higher flavored fruit than is produced in England, which he thinks mainly attributable to our brighter sun and clearer atmosphere. If trees branch low, there is not sufficient sweep of wind to change the air under the limbs. Forest trees never develop themselves fully; it is only when a tree grows alone that it attains a perfect form.

W. S. Carpenter said Chas. Downing chooses low heads for fruit trees, allows them to branch two feet from the ground, and gives his orchard garden culture. For himself, he prefers pruning higher up, otherwise the lower branches will have to be removed subsequently to afford room for a man and team to go under the trees; besides he wants the sun to shine on the ground a part of the time;—one great fault in pruning young trees, is leaving too many branches, which thicken up to a close head.

Mr. Coe remarked that nature shut out much of the sunlight in forests, and still the trees grew well; hence he fails to see the necessity of sunshine upon the ground,—thinks it better to mulch trees than to plow under them.

Mr. Carpenter responded, a tree which grew in a forest was mainly upright, with few side branches. The cultivator wants to change this to a handsome, easily accessible head—he wishes to diminish the vigor of the tree, and increase the pulp of fruit, which is done by summer pruning.

Prof. Thurber said that the ground is generally of a higher temperature than the air, and, to get the best results in propagating, we apply bottom heat to plants. In too much shade, the ground would not absorb sufficient heat to keep it of proper temperature. Repeated observations show that the temperature at one foot below the surface, is two to three degrees higher than the atmosphere.

M. Coe thinks that the higher temperature of the ground is due to the internal heat, which increases as we penetrate the earth; that radiation reduces this warmth; and that low branching trees would, in part, check radiation.

To this Prof. Thurber replied that observations made at two feet below the surface, showed a lower temperature than at one foot, thus proving that the heat was due to absorption of the sun's rays.

At the last meeting, Dec. 10th, A. S. Fuller in the chair, and a large and intelligent audience present, the conversation turned chiefly on grapes. Rev. J. Knox, of Pittsburgh, presented specimens of finely grown and well kept Delaware, Concord, Diana, Isabella, Catawba and Herbemont grapes, and samples of Delaware wine.

Mr. Knox being asked how he kept grapes in such fine condition, replied that they were allowed to hang on the vines until quite late, then picked and put in boxes, two layers deep, with dry grape or forest leaves between them. They were kept in a cool, dry place, out of the reach of frost. Diana keeps remarkably well, also Herbemont.—Concords have now been ripe three months. Thinks he can keep grapes until the strawberry season. No unripe or imperfect berries should be left on the clusters.

To the inquiry whether the Diana flourished at Pittsburg, Mr. Knox replied that it was very satisfactory with him. He attributed the partial failure of the Diana to two causes, viz., lack of winter protection, (it not being entirely hardy,) and want of pruning. He removes his Dianas from the trellis in November or early in December, prunes heavily, and covers them moderately with earth. Without this strong cutting back, they overbear. Can cover an acre of vines for $10.

R. W. Holton finds small and somewhat imperfect clusters on his Dianas the first year of bearing; the second year they do better; but they do not attain perfection, with broad-shouldered bunches, until the third year.

Mr. Carpenter thinks Diana is a good grape; does well under favorable circumstances; but requires so much care that it will never become popular with the people.

Mr. Knox thinks the peculiar treatment required by a really good grape, should not condemn the sort. With the conditions named, the Diana proves a valuable grape, and one well adapted for wine.

Mr. Fuller wanted to know why there are no vineyards of the Diana. It is a much older sort than the Concord, yet there are hundreds of acres planted with Concord.

Mr. Knox thinks grape culture has been injured by its friends who advise great expense in preparing the ground; some of them advise to stir the soil three and others four feet deep. This is a useless expense, and positively injurious to the vine. From Longworth and others we had learned that foreign sorts were not adapted to our climate, and we are now learning the equally important lesson that foreign modes of culture are also to be discarded. Fifteen to twenty inches is as deep as the soil need be stirred. If worked much deeper, and manured heavily, the vines grow too rampant. He gave a brief description of his method of pruning, beginning with the newly planted vine, which was cut back to two or three eyes. The second year he cuts out all but one cane, and the next Fall cuts that back to three eyes. These produce three strong fruiting canes for the third year, two of which are bent to form the arms, and the middle one trained upright. The trellis is not erected until the third year. The vines will each mature 10 lbs. of grapes the third season, and throw up canes for future fruiting. The process then consists in cutting out each alternate upright shoot every year, which leaves four bearing and four growing canes to each vine—the vines being six feet apart, and the uprights about nine inches distant and eight feet long. (They are fastened to upright slips of wood, as explained on page 116 of the April *Agriculturist*, 1863.—Ed.) During the Summer the new growth of the spurs is pinched in, retaining as many leaves beyond the last cluster as there are clusters on the spur. He has had no experience in spurring down to single arms, which he thinks does not afford sufficient room for our rampant growers, that if left to themselves would cover a tree 100 feet in hight. Prunes in November.

Mr. Fuller has practised this method—double spur pruning—for some years, and approves it.

Mr. Knox replied to a question concerning fertilizers, that he did not manure heavily, and uses only that from the stable, applying it near the *surface*. He cultivates strawberries between his grape rows, and makes them pay all expenses of the vineyard.

Dr. Ward attaches great importance to surface manuring. His own orchard has already been fertilized for next season, by spreading manure upon the surface.

Mr. Fuller says 15 to 18 inches is sufficient depth for the vine; his greatest trouble is to check the growth.

Containing a great variety of Items, including many good Hints and Suggestions which we give here in small type and condensed form, for want of space elsewhere.

Send in the Items.—The multitude of subscription letters now arriving contain many hints, suggestions and queries. Let them come—the more the better. We will work them up into useful items as rapidly as possible; some have been necessarily crowded over this month. Every item for the Editors, should be on a separate sheet from business matters, and this sheet always contain the date and the full address of the writer.

Important to Canadians.—We are happy to announce to our readers in Canada, that the Post Office Department at Quebec has issued a circular, dated Nov. 24, 1863, allowing the passage through the mails of "seeds, cuttings, bulbs, roots, and cions or grafts," at *one cent per ounce*, prepaid, in packages of not over one pound. When received from the United States, the one cent per ounce is to be paid by the recipient, in addition to the same amount of postage prepaid here. This is very important, as it will admit of our sending seeds and plants to our Canada subscribers without the danger of their being taxed $3.20 per pound, though prepaid here, as has often been done. Our strawberry plants can now be sent to Canada subscribers the same as to others. Books go at the same rates. After making a few inquiries about particular items, we will give full information next month.

Special Announcement to Advertisers.—We wish it to be distinctly understood by all parties concerned, that we have not altered the rule heretofore laid down by us in regard to advertisements, viz.: The proprietor of this journal reserves the right to reject any and all business cards that he does not approve or desire for *any* reason. Nothing of an unreliable character is wanted and nothing received from those unknown to us personally or by good repute, unless proper references are furnished. This does not refer to their paying us, (the terms are cash in advance,) but to the question whether the readers will be fairly treated by them.

News in the Advertising Pages.—An intelligent subscriber to the *Agriculturist* writes: "I always read the advertising pages to keep posted in general information." He is right; the columns of that department show what the wide-awake business classes are doing. We call attention to their cards with pleasure, from the fact that the advertisers, so far as we know, are worthy men, who will do what they promise. (We have rejected more advertisements than are inserted this month, selecting only those believed to be of good character.) There is no distinction in place—the arrangement of the pages being at the convenience of the printer, who classifies those in type when he is making up. Those on the last pages are as likely to be important to the reader, as those on the first pages, and *vice versa*. We repeat the standing request, that in writing to advertisers, with orders, or for circulars or information, they be informed *where* their business announcements were seen. This gives them satisfaction, and is advantageous all around.

The "Five-Twenties" Nearly Gone.—We have already referred to the gold-bearing 6-per-cent. U. S. Bonds, as one of the most desirable investments for any sums of from $50 upward. There were five hundred million dollars to be issued, of which probably less than fifty millions will remain unsold at the beginning of 1864. This is both a patriotic and profitable investment, we think. All needed particulars are given by the Government Agents in our advertising columns.

A New Railroad Line to the West has recently been opened, by the completion of some 200 miles of the Atlantic and Great Western R. R. from Salamanca on the Erie R. R., westward, via Meadville, Pa. This is part of a broad gauge track all the way from New-York City to St. Louis. The line is so far completed that cars will run through within a few months. We were sorry to be compelled to decline a courteous invitation to join in the festivities of an excursion to Cleveland, the latter part of November. A friend who took our place, furnished a lengthy and interesting account of the pleasant trip, but we have not room to publish it.

Above-Ground Cisterns.—L. Pierce, Chautauqua Co., N. Y. If you use straw in your barn, and so have a warm place to set the cistern, and can perhaps use a little spare straw around the cisterns besides, or if your barn is a *very tight* one and the number of stock you keep, takes off the chill from the air so that water seldom freezes, then you may with safety put up a cistern in your barn. Otherwise we advise its being set in the earth. Accidents from frost, most provoking in their character, often occur if cisterns are exposed.

A Wagon Question.—David Williams of Winnebago, proposes the following, to draw out information: "Suppose that of two wagons, made alike and of the same weight, one has iron axles, and the other what we use, 'thimble skained,' the axles of both worn smooth—would there be any difference in the power required to move them empty? Also, what would be the difference in power required, if any, supposing both were loaded with 40 bushels of wheat (2,400 lbs.)?"

Raisins.—Subscriber, Ottumwa, Iowa. The Delaware contains sugar enough to form raisins, but the seeds are so large in proportion to the pulp, that the fruit is of little value when dried. We have no good raisin grape.

The Adirondac Grape—A Correction.—The Horticulturist for November in speaking of the prize awarded to this grape at the October exhibition, says: "It must be borne in mind that the prize was for *flavor* alone, without regard to earliness, size, or anything else but this." The Adirondac was entered under Class H, of the schedule, which says: "For the best 5 bunches of native grapes of any kind, *quality* to rule, $2," and it received the prize over all others offered in this class. If *flavor* instead of *quality* had been the test, the rest of the committee would doubtless have agreed with Mr. Downing. These terms are often used as synonymous, which leads to frequent confusion.—We have no interest in the Adirondac, or any other grape, beyond the desire to have every candidate for public favor stand on its own merits. Every new variety of fruit is a long while in reaching its exact place in the scale of quality. While we consider it our duty to bring all new fruits of promise to the notice of the public, we are not committed to the productions of any one person, but hope to see the day when we shall have a grape superior to the Delaware, Adirondac, Concord, or Iona.

Constitutional.—D. P. Young, Scott Co., Md., asks if we have the constitution of any Horticultural Society to serve as a model. We have several, but they are in bound volumes. They merely define the duties of the different officers, and fix the terms of membership, leaving details to the Executive Committee. In such societies a few earnest people do all the work, and the less they are hampered by rules the better.

Plants for Names.—James Strong. Your grape is the Frost Grape, *Vitis cordifolia*...A. B. Parmelee, Wabash Co., Minn., sends *Calopogon pulchellus*, which may be translated "beautiful-beard flower"—one of our finest orchids.

Inquiries about Seeds.—Samuel E. Cooper and Geo. B. Roach.—We cannot find that the seeds are to be had in this city. Seed catalogues are out by Feb. 1st, and those interested should send to the dealers. The advertisements of the principal seedsmen are in our columns at the proper season, some of them now.

Seeds Received.—J. Ellsworth, Washington Co., Ill. Those sent as "Flowering Locust" are probably of *Cassia Chamœcrista*. The plant called "wild petunia" is not recognized; send a flower.

Lice on Cauliflowers.—C. E. Phelps, N. Y., is much troubled by lice on both early and late varieties. We should try salt upon them. Can any one suggest a better remedy?

A Large Onion.—Wm. N. Byers, Editor of the Rocky Mountain News, at Denver, Colorado, sends us an onion, which weighed two lbs., and this was not his largest, It was from Mexican seed, which seems to ptoduce large onions with him, but if brought East only yields them of the ordinary size. It is by means of irrigation that these immense vegetables are raised in Colorado Territory.

Soil for Small Fruits.—"D. D. L." A good deep loam, which is well worked to the depth of 18 inches to two feet, will suit small fruits of all kinds. If not naturally drained, provide for it by artificial means.

Some Pumpkins.—Silas C. Herring seems to be as successful at raising pumpkins as he is at manufacturing safes. A few days ago he deposited at the *Agriculturist* office a specimen weighing 264 lbs.

Utter Apple.—Thos. D. Plumb, Madison, Wis.,—Apples and cions received. The apples were past their prime, but gave evidence of fine quality, while the handsome form, and red color will doubtless make them a good market fruit. It is an Illinois seedling, unknown at the East.

The Sunday-School Question-Books No. 1 and No. 2, are believed to be worthy the attention of all Superintendents and Teachers, hundreds of whom have written in the highest commendation of them. They each contain 52 lessons, averaging 7 to 8 verses, taking up the more important events of the New Testament in the order of their occurrence. A running history of the intermediate events, with the notes, etc., give these books the character of a combined *history, chronology, commentary, text-book*, and *question-book*. No. 2 is designed to follow No. 1, but it may be used independently. The price of either book is 10 cents per copy, and 3 cents each extra, if 10 or more go by mail. If sent by mail pre-paid, the rates will be as follows:

1 copy, 14 cents	4 copies, 52 cents.	7 copies, 90 cents.
2 copies, 28 cents.	5 copies, 66 cents.	8 copies, 1 04 cents.
3 copies, 42 cents.	6 copies, 80 cents.	9 copies, 1 18 cents.

Dr. Hart's Opinion of the Above Works.—This eminent gentleman, the long-time Principal of the Philadelphia High School, gave the following unsolicited notice in the Sunday-School Times, of which he is Editor: "We have just been examining a little book published by the Editor of the *Agriculturist*, called 'Lessons for Every Sunday in the Year,' and have risen from the examination with a feeling of thankfulness that such a book has been made. We have never seen a Question-Book that contained so many conveniences and advantages as this—so many excellences, both positive and negative....The author of the plan is a life-long Sunday School man, and this book is the fruit of the experience of himself and some of his friends in trying to meet the practical wants of the Sunday School. *Like all good text-books, it has grown out of actual necessities and experience; it is a growth rather than a work.* We advise every Superintendent to send at once for a copy."

A Neat Sunday School Medal is offered in our advertising columns, by J. C. Garrigues & Co., of the S. S. Times. We have examined a sample of the gold one, which would doubtless prove a valuable souvenir or keepsake to any child so fortunate as to obtain one as a reward of good conduct and diligence. It is about the size of a double-eagle gold coin, neatly embossed with a Bible, wreath, etc.

Youmans' Class Book of Chemistry.—This new book of 460 pages, we have read entirely *through*, and we advise every person at all acquainted with Chemistry, to get and read it. It is laboriously prepared, full of facts and principles packed closely together, embraces the latest theories and discoveries, and is written in the lively, interesting, and vigorous style that characterizes Prof. Youmans' popular lectures. Though charmed by the work, we are in doubt whether to recommend it as a school book, except for adult classes in academies and colleges. We fear that children of only ordinary mental ability, and others entirely unacquainted with the science, would find this too strong meat. It would require considerable previous knowledge of science to enter understandingly into the discussions of the first part of the book. All teachers should have and read it, to obtain facts and illustrations, and to bring themselves up to date in a science which is rapidly developing, and outgrowing many of the theories of but yesterday. We think Prof. Youmans should prepare a preliminary elementary book of half the size, and less than half the amount of matter—one beginning with simple facts and experiments, and gradually leading the mind on to principles and theories—keeping all the while in view, that though strong adults march off with long strides, the uneducated mind, no matter what its years, must take short steps. The above class-book contains over 380 engraved illustrations. Price $1,25 by mail or otherwise.

Disreputable Business.—Several subscribers, mostly Postmasters, forward to us copies of papers, called the "New York Atlas", the "Lansingburg Gazette", and the "New York Weekly Casket", which are sent out in packages to Postmasters, with enclosed slips requesting them to distribute the papers in the post-office boxes, as sample copies, "to help increase their circulation." An examination of the said papers show them to be mainly filled with advertisements of quacks who pretend to great skill in any certain diseases. If the publishers of these papers lend their sheets for such humbugging, they are in the very disreputable business of helping to swindle the people. Postmasters should report to the department at Washington all such papers coming unpaid, and burn up all that come prepaid, if undirected.

Swamp Muck—"What Preparation Does It Need?"—This is the burden of several inquiries to the *Agriculturist*. Some muck may be hauled out upon grass land, so soon as it is dry enough to be spread evenly, and no bad effects will be noticed. Other kinds need to be exposed to the frosts and thaws of Winter, to be, as some farmers say, "sweetened." But in general it is best to dig the muck when the ground admits going to it in Summer or in Winter, draw to some convenient place, let it freeze a few times, and compost it with slaked lime, wood-ashes, or lime slaked with brine, etc. To this may be added any manurial substances not containing ammonia, and even these may be used after the compost has stood a month or two and been thoroughly worked over once or twice. Or without adding lime or ashes, the weathered muck may be composted with animal manures, urine, night-soil, or the like. Thus it will be found of much more value than in its raw state. There is no better absorbent of liquid manure for the stable or barn-yard.

Canada Thistles Again.—To several inquirers. There is nothing to be added to what has already been said upon the destruction of this pest. We are convinced that persistent mowing will finally subdue them. One correspondent writes that he succeeds best by allowing them to grow until just about to flower, and then cutting them down.

"Make" Land by Burying Stone.—"L. L." writes to the *American Agriculturist*: "Almost every body has noticed in his own experience, that *made ground*, as it is called, if the soil is only tolerably good, produces most luxuriant vegetation; yet how few act upon the hint. Neighbor D. has just been removing the surface stones from his field by drawing them away perhaps a quarter of a mile. Why didn't he open the ground a little and bury them? It would have taken no more time, and every ten feet square of land which he had thus *made*, would have been at least doubled in value. Never shall a loose stone be carried off my meadow." [Stones only make soil, by their decomposition, effected by frost, and atmospheric influences. If sunk in the soil decomposition will not go on. Crumbling granite or other felspathic stones add potash to the soil and thus enrich it.]

Ditching Plow.—F. A. Renz. We are not acquainted with the plow you refer to. Parties having such an implement, if good, would do well to advertise it.

What Kinds of Drain Tile to Use.—C. G. Packell, Randolph Co., Indiana. Former volumes of the *Agriculturist* have discussed particularly the uses of various forms of drain tile. In a good firm "gravelly hard-pan," or any really *hard*-pan not readily pervious to water, the horse-shoe or ∩-shaped tile does very well without a board to stand upon. On steep falls where a large quantity of water runs, it is safer to set these tiles on boards. The *sole* tile will admit all the water that can run through them, and so will the round tile. Of these two sorts, the round tile is now much used for lateral drains, and every tile-maker should get dies for them. They require a little more care in handling to preserve their form perfect. The sole tiles are heavier and more expensive. But they are valuable, when the ground is likely to wash, and where round tile might be easily displaced.

Size of Drain-Tile to Use.—Few people who begin to lay tile-drains realize the importance of having small lateral or minor drains. Two-inch tile is as large as are ever necessary, unless living springs are to be conducted off; and where the drains are not longer than 150 feet, 1¼-inch round or pipe tile or sole tile will answer perfectly well, provided the fall be as much as two or three inches per rod, and the joints and openings be so tight that mice, moles, or toads, cannot get in.

Bad Habits of Horses.—"M. B. P.," Schuyler Co., N. Y., has a 3-year-old mare which has the bad habit of hanging her tongue out when the bit is in, and asks for a cure. It is probably a coltish trick she will get over. Such are not uncommon. Try putting a little pulverized aloes on the tongue as often as you can find it out, or hitting it with a riding-whip.

Mutton Sheep.—"J. H.," New-Jersey.—Considering hardiness, excellence of the mutton, early maturity, and fair quality of the wool, the preference of the *Agriculturist* has long been for the South Down sheep. To breed large early lambs, from good sized common ewes, the use of a Cotswold or other long wool buck may be desirable—though butchers are very fond of the dark legs and faces which show the South Down cross. The Long-wools require more care, and will usually yield more weight of wool from the same amount of feed.

Cross for Fine Wool.—The best cross for a flock of common fine wool sheep is no doubt the *American Merino*—whose blood is of Spanish origin. The constitution of the breed and fineness of the wool is all that can be asked. Select French or American bucks with reference to quality of wool, size, and constitution.

Richness of Milk in Cream and Cheese.—Luke Hoxie, of Madison County, N. Y., reports to the *Agriculturist*, experiments with the milk of a herd of 16 cows, by which he finds that the milk richest in cream also makes by far the heaviest curd.—We regret that he did not repeat the experiment two or three times for the sake of accuracy, and extend his observations on the comparative amount of cream and the weight of the curd to the milk of each of the cows.

More Butter.—Hanson Gardner, of Rensselaer Co., N. Y., writes that from four old cows and two 2-year-old heifers, he made and sold 1360 pounds of butter last year, besides what was used in his family consisting of three persons. This was 226⅔ lbs. for each cow. At 25 cents per lb., which is less than prime butter is now worth, it would amount to $56.66 per animal.

Sugar in Sorghum Bagasse.—The statement from "Prof." Mot which has been going the rounds, that the cane refuse (bagasse) will yield under certain treatment a great additional quantity of syrup, we give no credence to. Bagasse from a good mill, well worked, contains but a very small proportion of sugar. The important question is: If worked upon a large scale, will it be possible to get *any* marketable cane sugar?—that is, sugar which will crystallize and make a table article. We have never seen a pound of *such* sugar that we *knew* was made from sorghum. This does not invalidate the value of sorghum for syrup.

The Spinning Wheel and Cheese Press.—Gradually one employment after another is taken out of the hands of women-folk, by the innovations of machinery and associated labor. Our grandmothers spun and wove, made up, and wore the wool of their own flocks. Our mothers spun, but they did not weave; our wives barely recollect homespun; they *can* make up their own garments—but now-a-days, little is left for our daughters to do but wear them out. Every thing else is done by machinery and factory labor. The labors of the dairy are going the same way, and for aught we can see, a home-made cheese will be as rare a sight in a few years as home-spun-and-woven linen is to-day. When that day comes, and even now perhaps, we may congratulate ourselves that the employments of the dairy are discovered to be unhealthy, and ruinous to the constitutions of the poor women who engage in them—in the family, not in the factory—according to X. A. Willard's recent brochure, in which he attributes "overtaxed muscle, incessant care without relaxation, disease, broken health, and premature old age," to the labors of the dairy.

Leaky Roofs.—John Wheelan, Jefferson Co., Wis. writes that the cracks often opened between a wing or rear addition and the main building, may be effectually closed with paint skins or the scrapings from old paint pots, prepared as follows: Boil them in a little linseed oil, stirring them frequently, making the mixture about the consistence of hasty pudding or mush. Apply it while hot with a small paddle, and it will soon harden. The application may need to be repeated once or twice.

Color of Houses.—J. A. S., Grandsville, Md. In matters of taste it is difficult to advise. Presuming that the house is to be some other color than white, our method would be to paint the window frames, etc., some shades darker than the body of the house, and the sash very dark. For out-buildings a similar color, but one that would be as little conspicuous as possible.

Cheap Paints.—The essential part of all good paints, properly so called, is Linseed Oil. Oil if well boiled, may be applied alone, and affords an excellent protection to hard wood and implements, and upon floors. Sundry substances ground very fine, are used to mix with the oil, and in proportion as they thicken the oil and form an opaque coating, they are said to possess "body." A pretty good, cheap paint for outside work is made by mixing plaster of Paris with white lead, or zinc-white, and grind them together in a paint mill with oil. Plaster alone may be used, and it is said to form a durable and very cheap paint. Of course any color may be given which is desired.

Cleansing Tainted Barrels.—John Wheelan, Jefferson Co., Wis., directs to throw about four quarts of bran into a tainted barrel, pour a pailful of boiling water upon it, and leave it covered for half an hour. Then scrub the barrel thoroughly with a broom, rinse it well with cold water, and it will be found sweet. This may answer where there is only a slight taint, but we should judge some stronger treatment necessary in most cases. A thorough soaking with strong lye from wood ashes, or putting the ashes in with hot water, or using lime, we should judge to be effective. The *safest* remedy was recommended by a cooper—buy a new barrel.

What Pears to Plant.—Wm. Howel, Decatur Co., Ind. There is a list of select varieties on page 17 (Jan. *Agriculturist* 1863), which will serve for a general guide—to be modified according to the experience of your neighbors. Varieties very good in one place, often fail in certain other localities without any assignable cause, and it is only from one's own experience or that of others near by, that he can ascertain with absolute certainty what sorts are adapted to his soil and climate.

Tarred Paper Around Trees—A Caution.—J. C. Fenn, Litchfield Co., Conn., writes to the *American Agriculturist* that he has used sheets of tarred paper tied around trees to keep off rabbits in Winter, and injury has been done by ice accumulating upon the bark under the paper. Care should be taken to arrange the covering, so that little water can enter.

Nebraska Plums.—R. O. Thompson of Otoe Co., Nebraska, says of the wild plums of Nebraska: "I have 8 fine varieties of good qualities (some as large as the Jefferson), of various colors, forms and times of ripening. For four years they have stood near Jefferson, Kirk's, and Coe's Golden Drop, and the Curculio has never injured a plum upon them, while the varieties named have been invariably destroyed, or at least it required much labor to get a single specimen of Kirk's to remain on the tree." We would like some cions, though we should fear that a plum which would resist the curculio here, would not be particularly valuable as a fruit. Thanks for the seeds.

The Scale on Trees Again.—Quite a number of remedies have been proposed by correspondents, and published in the *Agriculturist*. Here is still another from a New Jersey subscriber, who "took *some* lamp-oil, and a *little* soft soap," and applied it to the tree with the effect of killing the scale and removing the moss." The proportions are not very definitely given.

Grafting the Apple on the Crab.—"M. S. S.," Lyndon, Vt. It is not probable this would render the apple any hardier to withstand your Winters.

Evergreens and other Trees for Prairies.—Buel Sherman, Chickasaw Co., Iowa. Do not think of moving the evergreens until late in Spring. Oaks, hickorys, and other hard woods can only be successfully grown when the seed is planted where it is to remain. Even in favorable climates they need to have, while young, the protection of other trees, or to be planted so thickly that they will shelter each other. The thick plantings are gradually thinned out until the trees are of proper size to grow for timber. No doubt that any hard-wooded trees which will stand the climate, may be raised in Iowa, if protected thus during early growth.

Pruning Roses.—Mr. S. P. Adams, Hampden Co., Mass. The remontant roses are best left until Spring. Then cut out the weak and the crowded shoots, and shorten the others to three or four buds.

Strawberries.—Wm. Howel, Decatur Co., Ind. Wilson's Albany is considered good for putting in cans, as it is firm and quite acid. A crop can not be expected from plants set next Spring. Fuller's Strawberry Culturist costs 12 cents by mail and Barry's Fruit Garden $1 50. We can not particularize nurserymen, those who advertise in our columns are believed to be reliable.

Large Yield of Squashes.—Wm. A. Hart, Middlesex Co., Conn., raised on only 7 by 10 feet, *sixty* Boston Marrow squashes weighing 618 pounds

Asclepias Fibre (*Milkweed*).—C. F. Bigham, Tolland Co., Conn. Specimens of fabric made of this and part cotton, were shown at the late fair of the American Institute. As they were enclosed in a glass case, we could not form any judgment of them, and have not the address of the exhibitor. This is the only attempt we have seen to utilize this very abundant material.

Botanical Journals.—"A. E. E.," Illinois. There is no botanical journal published in this country. Silliman's Journal has a botanical department,

under the care of Prof. A. Gray, which posts up the botanical news. If A. E. E. will send us his full address, we shall be glad to communicate with him.

Vitality of Sprouted Wheat.—W. Watkins, Warren Co., O., writes to the *American Agriculturist* that wheat which has been sprouted by exposure during rain, is not entirely worthless for sowing. He experimented with 100 grains of grown wheat, under unfavorable circumstances, and 15 grains sent out sprouts. None of those grains grew, which had previously advanced far enough to throw out roots. However this may be, sowing such wheat would be wholly unadvisable, unless no other could be obtained.

Hoof-rot in Sheep.—Sometimes sheep exhibit symptoms of this disease when they come into winter quarters. It should be treated at once. Separate the bad cases; turn the rest into the thawing snow for a few hours, and then drive them slowly through a trough filled with a strong hot (not scalding) solution of blue vitriol. The trough should be 13 to 16 feet long, and the solution should be 4 inches deep in it. This will require about 6½ gallons to commence with. Meanwhile the shed should be cleaned out and fresh littered. The bad cases, after having the hoofs softened by the wet snow or grass, should have every particle of diseased horn and flesh removed, down to the quick, but not so as to cause bleeding, and then be subjected to the hot vitriol foot-bath, and made to stand in it longer than the rest. After about a week repeat the application upon the whole flock, without distinction. The symptoms of foot-rot very frequently decrease and almost disappear in cold weather to return in Spring and Summer.

A Wool Growers' Convention is to be held in Columbus, O., January 5th. Hon. H. S. Randall gives the address. All interested are invited to attend.

Chittagong Fowls.—A. E. Bates, Union Co., O., says that his experience with Chittagong fowls has not been encouraging. They were so tame as became a nuisance, requiring one person most of the time to keep them out of the dwelling-house. They would not hunt for food, and were altogether unprofitable.

Foul Brood in Bees.—J. T. Cooley, La Salle Co., Ill.—Foul brood in bees is a disease of the insect, while yet in the larva state, and of course before it emerges from the brood cell. If a hive be much infected, a noisome smell proceeding from the dead and decaying bees will reveal its presence. At its first appearance, it may be detected by the changed color of the larvæ in the sealed brood cells. These while living are white, but turn black after death. The origin of the disease is not certainly known. It is undoubtedly contagious, and no time should be lost in removing bees from a hive found infected.

Water Gap.—Several responses have come to Young Tennessee's question about a water gap. We shall give a few, with illustrations, in the next number.

Ends of Drain-Tiles.—"Greenhorn," Marengo, Ill. The upper end of a drain made of tiles should be closed, the lower end or outlet left open to discharge the water, but secured by a wire grating to exclude mice, toads, etc. The ends of the separate tiles are brought close together as possible; the water will easily find its way through the joints. Very full directions for draining were given in a series of articles in the *Agriculturist*, Vol. XX, (1861.)

Time to Prune Sugar Maples.—J. M. Woodruff, Sangamon Co., Ill. The growing season is the best time; probably May.

How To Treat Girdled Trees.—P. Schweizer, Waterloo Co., U. C., says that for trees from which the bark has been gnawed by mice and rabbits, he makes a plaster of cow dung and swamp mud, adding cow or horse hair enough to make it quite stiff. This preparation is spread upon a cloth and bound around the tree as soon as possible after the injury is discovered. He says he has never lost a tree if the application was made before thawing took place.

Grafting Nut-bearing Trees.—"J. K.," White Plains, N. Y., and several others, have asked about this subject. As already stated, flute budding has been used in Europe. This is done by removing a ring of bark from the stock and replacing by one containing buds, from a cion of the same size. We would suggest to those disposed to experiment to try herbaceous grafting, *i. e.*, to graft cions of new growth upon stocks of new wood. This is a matter upon which there is almost no reliable information, and we should be glad to hear from those who have succeeded.

Warts on Cherry Trees.—G. W. Battles, Trumbull Co., O. The only known remedy is to cut out the limbs thus affected and destroy them by burning. If allowed to remain they will infect other trees.

The Hartford Prolific Grape.—Hovey's Magazine impliedly calls our veracity in question, by saying that our remark that the Hartford Prolific will hold its fruit if properly pruned and not allowed to overbear, is "sheer nonsense." We simply reiterate the statement, and can prove it at the proper season, by showing the fruit which has been kept hanging on the vines into October. We wish the Magazine a long life, for what would the world do for horticultural wisdom, if it should "happen to die some day?" Its lease of life and popularity would be increased no doubt, if it put on less airs and acquired a little more courtesy and enterprise. This is a big world, neighbor, if Boston is its "hub." Try and be a little more cosmopolitan.

Moveable Grape Trellis.—W. B. Waldo, Dutchess Co., N. Y., proposes to make a trellis on the plan already given in our pages, but to have the upper part pinned to the posts in such a way that it can, with the vines, be laid in a horizontal position. This is not a new idea, as we have seen a model showing the same. It might answer for young vines, but the bend would probably be too short for old ones.

Borer In Peach Twigs.—W. W., Lafontaine, Ind. We are unable to identify the grub sent. Watch it and get the perfect insect and send specimens.

Russell's Prolific Strawberry.—H. C. Sigler, Clark Co., Iowa. We have not fruited this variety, but those in whom we have confidence, consider it one of the finest of the new strawberries. It can be had of W. S. Carpenter and other growers.

Fejee Tomato.—Loughsey, Alleghany Co., Pa. This variety is a week or more later than the common red, but bears abundantly until frost. It is cultivated in the same manner as the other, but the vine being more vigorous, we should set them farther apart. Its culture as a market sort is increasing. If is a greater bearer and a better fruit than the common sort.

Investing in Patents—To Several Correspondents.—Frequent letters have been received by the proprietor of the *Agriculturist*, describing various inventions made by the parties writing, and asking aid in bringing them before the public, by advancing money to pay for getting out letters-patent, etc. Usually an offer is made to share the profits, if such aid be furnished. Our business is to make a first-class agricultural journal; this leaves no time for such outside enterprises, and we cannot therefore spend time in investigating their merits, nor in personally answering letters on the subject.

Will it Pay to Advertise in the Agriculturist.—One of the most prominent seed dealers thinks it will. He says that he has no doubt that it will be to his interest to take all the money he expends in advertising and concentrate it upon the *Agriculturist*. He evidently knows how to reach the people.

"Over $500 for an Index."—Two or three subscribers were surprised (to put it in a mild form) at our statement last month, that the mere addition of 4 pages extra for the Index, cost over $500. They intimate that this was an error, or even something worse. We repeat, then, that the cost was *over* $550! The edition was just about 90,000. The paper was 5 lbs. per ream heavier than that commonly used in this journal. Please get a printer to estimate the cost, reckoning at the standard New-York City rates of 35c. per 1,000 ems for simple type-setting, and including 45 reams of paper, stereotyping, press-work, folding, etc. We do not reckon in the above sum, over $50 paid for *making out* the Index

Medical Humbugs.—"Private Diseases," "Confessions of an Invalid," "Physical Debility," "Marriage Guide," "Nervous Debility," "Warning to Young Men," "Cause and Cure," "Benevolent Association," "Howard Assocation," "Certain Cure," "Manhood Restored," "Essence of Life," "Medical Advisers," "Advice to the Married," "Early Indiscretions," etc., etc. Such are the expressions that shamelessly stare out in advertisements which are constantly admitted into not only the unprincipled City papers, but into otherwise respectable country journals, and, shall we say it? into some religious periodicals. We do not speak at random in saying that without exception, all these advertisements are not merely money humbugs, but they diffuse the rankest poison to the minds as well as the bodies of the young. No parent or guardian should permit one of these advertisements to even be seen by the youth under his care; better banish the journal containing them, or deface its vile pages before it goes into the family. This is not the place to enter into a discussion of the important subject of "private diseases." We hope Dr. Hall will take it up thoroughly in his paper, or in an extended "Health Tract." We will furnish him some letters, etc., on the topic, if he desires. His December Journal of Health contains a beginning, which it may be well for parents to read before consulting any of these advertising quacks. A dime sent to Dr. W. W. Hall, 831 Broadway, will doubtless secure a copy.

Frozen House Plants.—Miss F. A. Bronaugh, Clay Co., Mo., wishes to know what to do with plants which have been injured by freezing. Some very tender kinds will be killed at the slightest frost. Others of a more hardy nature will only have the succulent growing portion injured, and if severely pruned will start out again. Most roses will bear slight freezing without much harm. After the trouble has occured, the change to a higher temperature should be very gradual.

Scalded Cream.—Francis C. Cholvin, Vernon Co., Wis., requests some of the readers of the *Agriculturist* to furnish a recipe for making a dish called, "scalded cream," which he says is a favorite relish among the Cornish people. We are not acquainted with the composition, by that name.

Onion Culture.—The most valuable information to be found, in regard to all the particulars of onion growing, from the selection of the seed to the harvesting and marketing of the crop, is given in seventeen prize essays, from as many practical grower, published together in pamphlet form. Price 20 cents, post-paid.

Books.—"Subscriber," Crawford Co., Wis. The works may be had at the large book stores. We can not look up things entirely out of our line. Send such orders to Mr. Lane, or to any bookseller.

My Farm at Edgewood.—Donald G. Mitchell, better known as Ik Marvel, went upon a farm with the desire to enjoy country life, and with the intention to make it pay; he has recorded his experience in a most enjoyable book, with the above title. Those who take it up as a farm manual will be disappointed, though every farmer might draw from it many serviceable hints. To persons who have passed their lives in the city, and think of taking a farm, this work will be suggestive and useful. It is a common impression, among the inexperienced, that farm life is free from thought and care, and that stock and crops will in a great measure manage themselves. The tale of "hindrances and helps" so genially told by the author will serve to correct this mistaken notion. The book is enlivened by humorous touches, has its pathetic passages, and with a vein of strong common sense running throughout, it affords pleasant and profitable reading. Price $1.50.

Works On Propagating Plants.—John Arnold, Paris, C. W. McMahon's American Gardener, ($2,50) and Downing's Loudon's Flower Garden, ($1,50) give directions for the propagation of most greenhouse plants—they are both in our book list. Parsons & Co., of Flushing, N. Y., can probably supply the plants.

P. J. Willis & Co. is a Humbug of course, who for effect assumes, as near as he dare, the well-known name of N. P. Willis, the author, and one of the publishers of the *Home Journal*. His letters, *dated* at Covington, Ky., but to be answered to box 2100 New-York City, ought to deceive no one deserving to have the $10, which is so ingeniously and plausibly solicited by this lottery dealer. Will Mayor Opdyke please look after letters coming to "Box 2100?"

Humbug Sewing-Machine Companies.—The previous volume of the *Agriculturist* contained repeated warnings for our readers to be on their guard against swindling "sewing-machine companies." Letters from new subscribers—asking for information about this or that "Agency" from which circulars have been received, and whose advertisements appear in widely-circulated journals—call for additional notice of their operations. Briefly then, after considerable inquiry and investigation, we have been unable to find a single reliable company or "agency" among the many that send out circulars inviting the parties addressed to become agents. In these circulars splendid inducement

are made, statements of profits are given, and a large salary is offered; *but*, every one accepting an agency is required to first buy one of the machines at the retail price, and the promise is made that the discount for wholesale shall be refunded at the next purchase. Some who have caught at this bait, inform us that they sent their money, but have heard nothing further of it, nor of the promised machine. Others say the first machine, for which $10 or more was charged, came as directed, but it was not worth more than its weight in old iron. Of course they could make nothing by acting as agents for such trumpery, and they were obliged to pocket the loss. Well-established and reliable companies have their agents, but we know of none that send out circulars promising to employ whoever may choose to engage in the business. They select their men only after some acquaintance or guarantee of fitness. Beware of all such gilded baits: they invariably cover a *sharper steal*.

Humbug Mining Companies.—For special reasons, we omit giving this month the particulars in our possession concerning a "Mining Company," hatched up in Philadelphia by third-story self-styled "Bankers," who refer for their responsibility to unknown U. S. officers; to "cashiers" who have been discharged from their places months ago; to small potato "wholesale merchants" selling a few trinkets in an upper room in a small alley—etc. Any one who has money enough to pay for printer's ink, can get up (on paper) a splendid show for a "Mining Company," with blank forms for "Shares" on imitation of parchment, and too many of this class succeed in filching money from the unwary. Beware of *all* new Mining Companies, whose officers are not personally known to yourself or friends, and beware especially of those sending out circulars over the country.

Cheap Sewing Machines Again.—"F. M. L.," Rockford, Ill. The $15 machine referred to may answer a good purpose for several years, but it is a *pirated* machine. That is, no license is paid for the two or three patents involved in it, which are owned by other parties. Any person purchasing the machine is liable to have it taken away by those whose rights are infringed. This is one ground of our caution against purchasing "cheap machines." We know of no good machine, licensed to use the various patents held by several sewing machine companies, and requisite to accomplish the work satisfactorily, that is sold for less than $40.

A New Patent Fertilizer.—An exchange paper makes itself merry over a new manure it has seen advertised. It is said to be deposited by a bird with a grandiloquent name, from a southern ocean, which lives on electrical eels, and its offal contains ammonia and lightning combined in remarkable proportions. It recommends that, instead of waiting for a ship-load, in these perilous times, the farmers of a town or county club together and buy a few birds; for if one of them only flies over a corn-field, it will start the corn knee-high at a lick! Who wants a bird? They are very scarce as yet.

Hoove in Sheep.—L. R. B., Grant Co., Wis., writes the *Agriculturist* as follows: "What remedy is there for sheep that become bloated on fresh clover? About October 1st, I turned my sheep into rank clover, letting them stay on it but one or two hours twice a day. On the fourth day, after having been in an hour and a half, a nice two-year old wether bloated up, and died in a few minutes. The next day, after having been in one hour, a three-year old ewe was observed to be in pain; I immediately turned the flock out, and went to a neighbor's for advice, and when I got back (30 minutes having elapsed) the sheep was dead. I opened both sheep, and found the stomach a mass of fermentation, and inflated to its utmost capacity. The sixth day, and subsequently, the sheep remained in the clover, and no more deaths occurred." The remedy in such cases is to drive the sheep about actively. If the animal is in such pain that this cannot be done, an opening must be made through the flank into the paunch. There is an instrument called a Trocar which not only makes the cut, but forms a tube for the escape of the gases. Usually there is little time to wait, and the pocket-knife must be used. Make the cut through the flank near the backbone, just behind the ribs. The paunch will be seen distended, and pressing up into the flank; puncture it, making the animal lie so that the hole will be uppermost, so as to let off only gas. Should solid matter escape into the abdomen, it will prove fatal.

Portable Fence for a Sheepfold.—H. P. Thompson, Pendleton Co., Ky.—The coarse wicker-work hurdles used in Europe make a perfectly tight fence. A dog could jump over—but were the upright sticks left long and pointed, extending say two feet above the top of the wicker-work, we think dogs would be effectually excluded. These hurdles may be bound together with thongs of raw-hide, and supported besides by stakes set as braces, and the fence lashed to them. We may be able to describe and illustrate them soon.

To Relieve Choking Cattle.—Chas. W. Haight, Westchester Co., N. Y., writes to the *Agriculturist*: "I lately witnessed a very practical and easy method of removing the obstruction. It consists simply of a stiffly-twisted inch rope, long enough to push the obstruction from the gullet quite into the stomach. The end should be wound with strong cord, far enough from the end to form a fibrous knob. Two men hold the cow, another with this clears the gullet, and saves the animal."

A Cow With No Appetite.—Chas. R. Smith, Barnstable Co., Mass. From your statement you appear to think your pet heifer needs a purgative as well as a tonic. The following treatment will be safe at any rate, unless some decided symptoms of disease are apparent, in which case we of course would not advise. Give ½ lb. epsom salts, and 4 oz. sulphur, in ginger tea, letting it flow slowly down the throat. Repeat the dose if it does not operate. Follow this treatment with powdered Ginger 2 drachms, Gentian 1 drachm, and Carraway seed 1 ounce, given daily in cut feed, or sprinkled upon finely sliced roots (carrots if possible,) for ten days.

Books on Stock.—In answer to several inquiries, we recommend *Flint's Milch Cows and Dairy Farming*. *Youatt and Martin on Cattle* is an old, but excellent work. The most practical work on the treatment of disease in cattle is *Dadd's American Cattle Doctor*. For the horse breeder and owner, there is no book so good as *Herbert's Hints to Horse Keepers*. It is plain direct and reliable in its teachings, and written in a very agreeable style. *Dadd's Horse Doctor* is good, and *Mayhew's Illustrated Horse Doctor* most excellent. For Hog literature, Youatt's work is best, though Richardson's contains much valuable information. *Randall's Practical Shepherd* is, as we have said before, the best hand-book of sheep husbandry. *Bement's Poulterer's Companion* is a good and reliable work. All these books, with the prices, are in our book list, page 29, except the Practical Shepherd; we have however the Fine-wool Sheep Husbandry, by the same author, and also his Sheep Husbandry at the South, the latter also bound with Youatt on the Sheep, and called the *Shepherd's Own Book*,—all of which are very good.

Pumpkins for Cows.—(R. T.) It is a mistake of your neighbor, that pumpkins increase the quantity but injure the quality of milk. Experience is largely against him. Pastures are apt to fail in the Fall, and the milk fails too. Every farmer should provide green corn fodder and pumpkins enough to keep up the flesh and milk of his dairy to their average standard. On commencing to feed pumpkins, it is well to begin moderately, and then feed regularly. Take out the seeds.

Cribbing Horses.—G. W. Dewey. This disease arises from sour stomach, (dyspepsia,) in all probability. The Horse cannot vomit or easily belch wind, and so, to relieve the stomach of gas, takes this method of placing his throat in a position which will let the gas out. Try the effect of keeping salt constantly before the horse. Dampen his food and sprinkle prepared chalk or magnesia in small quantities upon it. Besides this, Mayhew recommends a handful of powdered oak bark fed with his grain daily.

Smith's "Cantering Horses."—We have had one of these several weeks, and can speak of it in the highest terms. It is an unfailing source of pleasure to the little folks, who "take turns" in riding whenever the weather admits of their being out of doors. A boy of seven drives it at a rapid pace, and guides it very readily. Its strong construction, and consequent durability, are decided recommendations for anything to be used by bouncing boys and girls.

Bones for Hens.—"B. W. O.," South Reading, Mass., asks, "Is bone-dust good for hens to make them lay?" Hens will pick over and eat common bone-dust; but one of the best things we ever fed to hens in Winter or Summer is finely pounded fresh bones from the table. There are solid flat rocks enough in old Middlesex that will make good pounding beds, and for a pounder use a 6-pound sledge.

"Will Tobacco Growing Pay Now?" asks a Kentucky reader of the *Agriculturist*. "Will not the greatly increased tax upon it, recommended by the Secretary of the Treasury, and likely to be imposed by Congress, tend so far to lessen the use, as to lessen the demand?"—We might well hope so, for the sake of the health of the people; but with this as with other narcotics and stimulants, cost is seldom reckoned. The more difficult the acquisition, the more earnest is the devotee to secure the object of his desire. Further, a large amount is exported, and the foreign demand will not be likely to decline; while the war has diminished the production in the prominent tobacco growing regions; and the old stock has been decreasing for two years. So we suppose tobacco culture will go on as prosperously as hitherto. We shall not publish much on the subject this year. Those intending to grow tobacco in large or small quantities, will find full and complete information from 14 practical growers, in the book of prize essays published last year. See book list on page 29.

Lists of Fruit.—John Fisk, Middlesex Co., Mass., asks why we do not recommend a single variety of apple or other fruit instead of a list of several. It would be impossible in the first place to suit all tastes: secondly, one variety will not give a succession of early and late fruit; and thirdly, it is never safe to depend on any one sort, as diseases frequently attack a particular kind and destroy it throughout a large section of country.

Crab Apples.—P. Mulford, Camden Co., Pa., Jr., is troubled by the falling of the fruit before maturity, and wishes to know the cause and the remedy. We should look first for an insect in the fruit, and if the cause could not be found, then would try severe pruning. We do not recollect having heard a similar complaint, and should be glad of any information in the matter.

Seedling Apples.—E. D. Blakeman, Columbia Co., N. Y. The fruit seems to be a very fine crab apple, of large size and good color. The bottle of sauce sent was very good, by some relished like cranberry sauce, and by others not liked so well. We can not decide from our slight knowledge of it, whether it is superior to other crab apples now in cultivation; it evidently promises well. We should prefer a name consisting of a single word, to the one you propose. The name of either your county or town would be appropriate.

Fruits for Central Illinois.—L. Marston, Vermillion Co., wishes a selection of five each of apples and pears. Bartlett, Belle Lucrative, White Doyenne, Seckel and Duchesse among pears; and Early Harvest, Maiden's Blush, Snow, Yellow Bellflower and Roman Stem Apples, will do well in his section, though there may be local peculiarities which will render it injudicious to plant some of them.

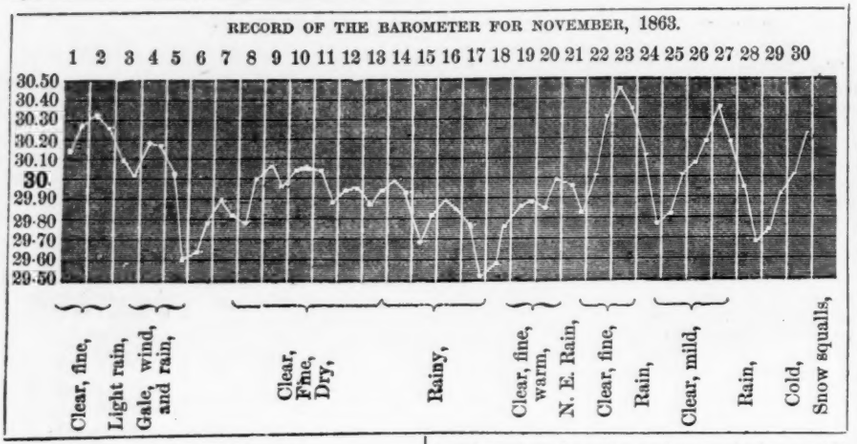
Watson's American Home Garden.—This book of about 530 pages, by Alex. Watson, is recommended to the many inquirers for a book on gardening. It treats of vegetable gardening, fruit growing, and as much of flower gardening as most people will be able to practise. The various implements in use are described and figured, as are the fruits and many of the vegetables. The different modes of propagating and training are clearly explained and illustrated. All the subjects are treated in a plain and practical way, and we know of no better work for the purpose for which it is intended. Price $1.50, by mail, or otherwise.

"The Fruit Garden" is a very complete treatise by P. Barry, of the well known Mount Hope Nurseries. It is not, as one would suppose from the title, confined to the fruit garden, but includes instructions for starting a nursery, planting orchards, budding, grafting, pruning, training, laying out plantations, etc. It is valuable to any one engaged in raising fruit, and especially so to beginners in the business. It contains 398 pages, well illustrated. Price, by mail, $1.50.

More Grape Queries.—Geo. W. Aldred, Hamilton Co., Ind., asks what kind of grapes we would recommend a farmer to plant. If confined to one kind we would say the Concord. We doubt if there are 20 varieties worth cultivating by any but amateurs. See grape notes in November and December *Agriculturist*.—W. R. Chapman, Burlington Co., N. J. We have already given all the information we have upon this new grape. The Yeddo Grape has not fruited in this country.

The Creveling Grape.—Mr. Massey, Editor of the Sunbury American, Northumberland Co., Pa., informs us that he has fruited this variety for four years. He says that with him it is not as early as the Hartford Prolific, but he prefers it to that variety, and its keeping qualities are remarkable for an early grape.

The Haw or White Thorn.—Jno. Fitzgerald, St. Joseph Co., Ind. Both the plants and the seeds can be obtained in this country. The objection to it as a hedge plant is its tendency to drop its leaves during our hot Summer, which weakens its growth.



Barometrical Records.

In the *Agriculturist* for July, 1863, (page 205,) two diagrams were published showing the variations made by the barometer during two months, accompanied with notes on the use of the barometer, which need not be repeated. Quite a number of our subscribers suggest that it would be interesting to many who keep similar records in different locations, to compare them with one kept in this city. To gratify such, and also to show how regularly changes of the weather are marked by the instrument, we purpose presenting the record from month to month. As we go to press before the beginning of the month, this report will necessarily be a month behind the date of each issue. In the diagram, the perpendicular lines mark the days of the month, as noted in the figures at the top; the horizontal ones at the side, indicate the hight of the mercury in inches. Each horizontal line represents ten hundredths of an inch. The *irregular white* line shows the course of the mercurial column from day to day. Two observations are made each 24 hours; at 7 A. M. and 9 P. M. The dots in the irregular line show the position of the mercury at those times.

Price of Corn—The Markets.

"Mixed Corn" has been sold in our markets to-day (Dec. 18), at $1.33 per bushel!—a price not before reached within our recollection. When on the farm at the west, we used to think our corn well sold if we obtained 25 to 30 cents per bushel. Less than two years ago corn was burned as fuel in some parts of Illinois, because there was no market for it even at 12 cents a bushel. It is now quoted as high as $1.00 per bushel in Chicago. These prices are in part due to an unprecedented speculation, promoted by the abundance of money, and the premium on gold; but after allowing for this, the value set upon corn is the result of an extensive failure of the crop in Indiana, Illinois, and elsewhere. In the States named, there was little corn ripened sufficiently for seed, north of latitude 40°. This state of things brings much perplexity and real want to many farmers—all feel it. Cattle and swine are pushed forward to market half fed. The soft corn which was saved will not fatten them, and it brings a good price; so the animals are sent to market, and the corn is sold to the eastern dealers; and the packing houses of the west are glutted with poor beef and pork. The New York markets have also been largely supplied with beef cattle and hogs, so that meats have not kept pace with other products, though at the last general market, Dec. 16th, good beef cattle sold at prices equivalent to 10½ to 11½ cents per pound for the dressed carcasses, and very extra animals at 12 to 12½ cents. Good corn-fed hogs at 6 to 6½ cents per pound live weight. Sheep are also sent to market quite freely, owing to the scarcity of winter feed in some sections. They sell now at prices equal to 6 and 6½ cents per pound, live weight. The carefully-prepared, condensed Market Tables on page 27, will afford much information upon the transaction during the past month and year. It will be seen that almost all farm products have advanced during a month.

The Wool Market.

The steady advance of domestic fleece since shearing time, and during the most active season known to the trade for many years, has awakened an unusual interest in this article, affecting as it does, so large a number of farmers. All are desirous of being able to judge of future prospects. At the Colonial wool sales, in London, in November, previous high prices were not only maintained, but an advance was established on most grades. There will, therefore, be no unusual tendency to this market of foreign wools, unless exchange is much more in favor of importers than at present. This may happen through great Union successes in the field, or Federal legislation that will hinder speculation in the precious metals. The stock of wool now in store is small, and there is very little business doing, nor will there be before the middle or last of the month. Manufacturers and buyers are generally, busy, as usual, in closing up the business of the old year. Holders are generally very strong, and able to carry their stocks, in view of the great ease in the money market. There is, therefore, no prospect of a fall in prices before business is again active, unless there be a fall in gold and exchange, in which case even the relative price of wool and gold will doubtless be maintained.

Water in the Stock Yard and Barn.

Perhaps no improvement can be suggested which, if carried out, will give more satisfaction to the majority of farmers, than that of the introduction of flowing water into the barn and cattle yards. The advantages of having water ready at hand are apparent to all, but the methods of accomplishing it are so various, that it is well to consider several of them.

Direct flow with slight fall.—Where water can be obtained by conducting a stream from a brook or pond so as to distribute it in the tanks and troughs set in convenient places, it is only necessary to protect it from an over supply in time of freshets, and from freezing in winter. The former may be done by providing a box—which, in case of any excess of water, will overflow and not surcharge the conduit; the latter by laying selected drain-tile, dipped in thin hydraulic cement, using cement so as to close the joints, and covering this pipe two feet under ground. Wooden pipe (bored) will also answer an excellent purpose. If pitched within, and painted on the outside and in the joints with coal tar, this is very durable.

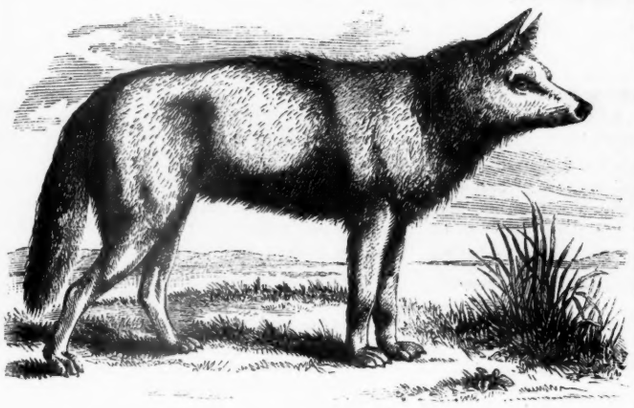
Direct flow with great fall.—When springs upon the hills are brought down to the farm buildings, and the difference of level is great, stronger pipes are ordinarily required. Lead pipe is now very expensive, and besides, it poisons some waters. Iron pipe is cheaper and very durable, but fills with a rusty concretion under some circumstances; most waters however rust it but little, and it is on the whole to be highly recommended, and easily obtainable.

Cisterns and Reservoirs.—With sufficient reservoir or cistern room we may maintain a constant and abundant supply of water for the season that cattle are generally kept up. The cheapest cisterns are made by excavating a hole of proper diameter, making the bottom and wall as smooth as possible, and laying a flat centre stone to stand upon at last. Then lay on a surface of cement mortar 1½ to 2 inches thick, made with mixed gravel and sand, from quite fine to the size of a large pea; follow this with a coat of the same, in which, however, no stones are larger than wheat grains, to leave a smooth surface—to be finished by "floating" it over with a thin coat of cement in which there is only a little fine sand. Thus used, a barrel of cement will cover 170 square feet of surface. The top of the cistern will be a foot below the top of the ground, and may be covered with plank painted with coal tar and covered with earth. A pipe running directly from near the bottom of the cistern, or a siphon, the short leg of which shall dip nearly to the bottom, will supply water at any lower level.

Wells on higher ground.—It not unfrequently happens that a well (15 to 30 feet deep) dug on a hill side, will deliver a constant supply of water. A siphon may be used in this case, and the water delivered in a constant stream, at a penstock down the hill. Water rams, windmills, and Artesian wells, may form a subject for future consideration.

Filling Ice-Houses.

An ice-house should always stand above the reach of floods; if near a stream or pond, as where ice-houses are built for supplying villages or for storing large quantities of ice, it is always best to place them near as possible to the water, so that a "way" may be constructed, upon which the cakes may be slid up to the requisite level. When the ice must be moved a distance to the ice-house, provide two joists upon which to slide it up into the sled or cart. The cakes should be cut as large as they can be conveniently handled, and so as to fit the house. The ice ought to form nearly a solid block, when the house is filled. Each course should break joints with the one below, and the spaces between the cakes should be filled with pounded ice, and six inches between the ice and the walls of the building with sawdust, or chips from the planing machine. It is more agreeable and better to handle ice, and to fill an ice-house, when the weather is very cold, than when it is thawing



The Prairie Wolf.—(*Canis latrans.*)

Those of our readers who live in the far West, or those who have travelled over the great prairies which lie between the Mississippi and the Pacific, will recognize in the above engraving a very familiar animal. At the East, this wolf is only known in confinement, it being occasionally seen in collections of wild animals, and during the past Summer, one has been added to the curiosities of the Central Park, where he has attracted a great deal of attention from the thousands who visit that popular resort. To introduce him to many other thousands, our artist has induced him to stand for his portrait, and succeeded in getting a most striking likeness. The prairie wolf is found from the Missouri river to the Pacific Ocean, and from Northern Mexico to Canada. Its size is about that of a common pointer dog; its color is a yellowish gray, mixed with a little black, especially on the tail. The face of this wolf is so much like that of a fox that one might at first sight readily mistake it for a gray fox. The voice of the animal is several sharp barks followed by a prolonged howl of the most dismal description. It is sometimes called the Barking Wolf, and in Texas it bears the Mexican name of Coyote.

These wolves are sometimes seen singly, but they more generally travel in packs of 6 or 8. In the matter of food, nothing in the way of birds or quadrupeds comes amiss to them, and when hard pushed by hunger, they will even feed on carrion. They are very troublesome to settlers in the countries where they are numerous, from their partiality to chickens and mutton. In travelling over the western plains we have more than once been obliged to make our breakfast without meat, the wolves having crept into camp and stolen that which was provided for our morning meal. Like the fox in the fable, they are very fond of grapes, and they descend upon the vineyards at El Paso in such numbers that when the fruit is ripening it is necessary to keep an armed guard to drive them off. These animals are remarkably swift of foot, and in packs of half a dozen or more they will chase and run down deer. It is said that the prairie wolf is easily tamed if taken when young, and that in their domesticated state they make themselves useful as rat catchers. They burrow in the ground, and produce five to seven young ones at a litter in the months of March and April.

Leghorn Fowls.

J. C. Thompson, of Staten Island, who has imported stock of this breed of fowls, gives us an account of his experience with them. He says: "I know of no better layers, and they are not disposed to sit. The chicks are very hardy, well fledged, and very precocious; the male birds crow when 6 weeks old, and the pullets lay at 3½ to 4 months old. The weight of the full-grown fowls is 5 lbs.; they are of all colors, and are often pure white. Their combs and wattles are very large; the face or ears are from a pinkish white to a pure white. The size of the combs and wattles is an objection in cold climates; in the latitude of New-York City it is necessary to protect them against extreme cold weather, but they lay well in Winter when so protected. The Brahma Pootras are considered best for cold climates, and are said to be excellent winter layers. They are very large and remarkably quiet birds."

Fig. 1.

Straw Shelters, Stables, Ropes, etc.

The only abundant building material of the open prairie appears to be straw or hay. Shelters for all domestic animals are constructed of it. A few poles form a roof-support, and the straw is piled about and upon them. On the sides of the shed the straw is either simply a trodden down heap, trimmed with a hay-knife on the inside, or it is piled against rails. These are very warm sheds, (see fig. 1)—but they wet through, leak, and the straw rots and must be removed after a short time. Accumulation of straw on the prairies is now prevented so far as the heading harvesters are used. These it is well known cut simply the heads of the wheat, leaving the straw as tall stubble. Still there are comparatively few headers in use, and straw heaps, new and old, dot the prairies far and near, or their burning illuminates the country by night.

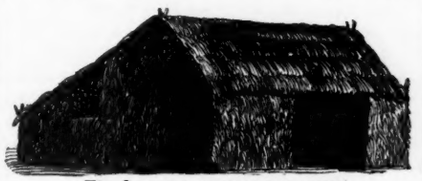


Fig. 2.—STRAW-THATCHED SHED.

Instead of the shelter now in vogue, better sheds might be built, using the same materials. Much of the tall stubble cut close to the ground is long enough to make most excellent and durable thatch, if well put on. A few bundles of wheat might be threshed out by hand, and the straw saved, or even the machine threshed straw might be used and answer tolerably well, if a sharp pitch be given to the roof. Thatching is understood by many immigrants and the principles upon which good work depends are so simple, that where beauty is not demanded, any handy man will make a tight roof after a little experience. There are several methods of using straw to form the sides or walls of these stables. A convenient way is to set upright poles about 8 inches apart, and draw wisps of straw round each, so that both ends of each wisp shall be outside. It is best to lay these in horizontal courses and beat down each course as it is laid, keeping it uniform and tight. As the filling in with straw progresses, there may be a split pole woven in once in three feet or so, to hold the

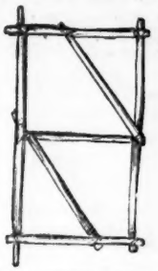


Fig. 3.—DOOR FRAME.

Fig. 4.—STRAW DOOR.

uprights in place. The straw is finally to be raked down on the outside so as to shed rain well. This makes a tight, warm, and lasting wall. The inner side is quite even, and it may be sprinkled with mud if there is danger of the animals pulling out the straw to eat. (See fig. 2.)

STRAW DOORS AND SHUTTERS.—It is a great convenience, where lumber is scarce, to be able to make expeditiously a good door or shutter of any kind. Constructed of straw a door may be strong, light and tight. Tie, or wire together, a frame of round sticks—braced or stayed by cross-pieces to give requisite strength. (Fig. 3.) This frame should fit loosely in the window or door-place, and one of the upright pieces should be strong enough to hang the door by. Then wind a straw-rope of 1½ to 2 inches in diameter, around the longest way so as to cover the frame. Next, weave a tighter wound straw-rope, back and forth, plaiting the whole in a single mat. (Fig. 4.) The strands on each side of the frame

Fig. 5.—IMPLEMENT FOR TWISTING STRAW ROPE.

may be plaited separately, forming thus a double thickness of the straw mat. We have seen affairs made in this way by the soldiers, and stuffed with straw as the weaving progressed, and when done they made very good beds.

STRAW ROPE is made by twisting damp straw. Sprinkle a heap of straw the night before. All farmers should possess a set of centre-bits and stock. Take a large centre-bit and attach a stout wire hook to it and place it in the bit-stock. Where the bit-stock is wanting, contrive some substitute. Two persons are required—one twists a loop of straw into the hook, (fig. 5,) and walks backward turning from left to right; the other remains at the straw heap and feeds fresh straw to the lengthening rope. A sufficient length being attained, the rope is fastened upon a fence or between poles or trees until dry, when it will not untwist.

IN order to reach perfection it is necessary to have either very faithful friends or implacable enemies; since we must be made sensible of our failings, either by the admonitions of the former, or the invectives of the latter.

About Muck and Leaf Mould.

"L.," of Chicago, and several others, propose to the *Agriculturist* various questions concerning muck and leaf mould, which may be most readily answered by a brief sketch of the nature and uses of these substances. To give this, it will be necessary to state some general facts concerning vegetable life. The principal part of all plants, or rather of all plants when dry, is *carbon;* this element we are most familiar with in the form of charcoal, and it will be seen from the amount left after a piece of wood is charred, how large a proportion this makes up. Water is also an important and abundant constituent, even in the driest wood, and it may be stated in general terms, that all plants consist mainly of charcoal and water. We can readily understand that the plant obtains its water from the moisture in the soil, but the source of the carbon is not so evident. The carbon comes from carbonic acid, which is a compound of carbon and oxygen, and is an invisible gas. The plant has the wonderful power of decomposing carbonic acid within its tissues—appropriating the carbon to build up its growth, and setting the oxygen free. Carbonic acid is always present in a small proportion in the atmosphere, and a plant in pure sand will grow, from carbon yielded by the carbonic acid of the air, or that dissolved in the water with which it is supplied. A plant in this condition can not flourish vigorously, as it needs (among other things,) more carbon than can be obtained from these sources. When placed in good soil, it not only receives carbonic acid from the air, but from another important source, viz., the decomposition of vegetable substances in the soil. When a plant is burned, a small amount of ashes is left and the rest of the bulk passes off, mainly as carbonic acid and water. The carbon, or charcoal, unites with the oxygen of the air, and forms carbonic acid, which diffuses itself in the atmosphere, where it is ready to contribute to the growth of other plants. If instead of burning the plant, it is allowed to decay, the process, though much slower, produces precisely the same results—the carbon finally disappears as carbonic acid. When vegetables decay, they do not, as in burning, pass directly into carbonic acid and water, but there is an intermediate state between their perfect condition and their complete decomposition. The structure is broken up and a powdery mass is left, to which the general name of *mould* or *humus* is given. According to the circumstances under which the decomposition has taken place, mould has different properties, and distinct names have been applied by chemists to its various conditions; but by whatever name it may be called, it is vegetable matter in some stage of its progress toward a final resolution into carbonic acid and water. Peat, swamp muck, leaf-mould, or the mould from the decay of various plants in the compost heap, are much alike. Peat and muck differ from the others because the decomposition goes on in the presence of much water, and this does not allow the change to extend beyond a certain point, as air is in a great measure excluded. Hence, deposits of muck will remain for ages, the vegetable matter of which they consist being in a partly decomposed state; but when it is dug out and exposed to the air, the decomposition sets in again, and goes on until it is completed. All good soils contain an appreciable amount of vegetable matter undergoing decomposition, and this, by its complete decay, furnishes a supply of carbonic acid which is taken up by the roots of plants. Where soils are deficient in this vegetable constituent, then muck, leaf-mould, and composted plants, are just in a condition to supply it, and are added with benefit. For the same reason, green crops are plowed under, as these, by their decay, supply the needed vegetable matter.

The question has been asked: "Will plants flourish in a soil composed entirely of mould?" There are some plants which will grow, and even prefer such a soil, but there are none of these which we cultivate for food.—As before stated, when a plant is thoroughly burned, there is an incombustible portion (ashes) left behind; this shows the amount of mineral matter taken up by the roots. Without being able to show of what use these are in the life of the plant, experience teaches that they are essential to its perfect development, and that most plants will not make a healthy growth if placed in a soil of pure vegetable mould. While this brief account does not give all the conditions of plant growth, the statement with regard to the uses of vegetable matter in the soil will enable those who ask why we so constantly recommend muck, etc., to see the reason for it. Soils already rich in vegetable mould, as is often the case at the West, will not be benefited by an addition, nor is the absence of this, necessarily, the sole cause of unproductiveness.

The Treatment of Night Soil.

Since the appearance in the June *Agriculturist* of an article describing the great poudrette manufactory, there have been several inquiries as to the manner of rendering the contents of privies available in the small way. Many persons who have gardens or small places would gladly make use of this source of manure, if it could be done in a manner not offensive to themselves or their neighbors. The great obstacle to the employment of this domestic fertilizer is its fluid condition, caused in part by the common practice of using the vault as the receptacle of the house slops of all kinds, and in part by the faulty construction of the vaults themselves, which admit water either from the ground or from rains. On the farm, these semi-fluid contents of the vault can be conveyed to a pit and covered with muck or loam, and after remaining until the liquid portions are absorbed, they may, after a long time, be brought to a condition in which they can be used. Where one has only a limited space, this manner of managing the night soil is not practicable, and it is often cheaper to have it carted away, than to attempt to use it. In order to save the manure in a manageable state, the vault should be provided with a tight box to receive the droppings, and should be so constructed as to allow of the removal of this without much trouble. If the privy is built upon the edge of a bank, this can be contrived all the more easily. The contents of the box should be kept as dry as possible, and the emptying of slops into it should be strictly prohibited. To prevent unpleasant odors, to absorb liquid portions, and to aid in the division of the manure, there should be a supply of absorbent material: this may be muck, peaty earth, deposits from ditches, fine refuse charcoal from coal pits, or even good loamy earth. Whatever material is used, it should be dry and kept near at hand in a covered box or barrel. A layer of the muck, or other absorbent, is to be placed on the bottom of the receiving box, and at intervals of a few days an additional supply should be liberally thrown over the accumulated deposit. If a few handfuls of plaster are thrown in occasionally, it will help to suppress odors, and increase the value of the manure. When the box is filled, it can be removed and its contents added to the compost heap, or it may be converted into poudrette. For this purpose it may be worked over with an additional portion of muck or other absorbent, using this in such quantity that it will, with what has been previously added, form about three quarters of the whole. The mass should be kept dry, and the working should be done under a shed or in a place where it can be covered with boards to exclude rain; and after the material is prepared it should be kept perfectly dry.

The Action of Plaster as a Fertilizer.

Perhaps no subject connected with agriculture has given rise to more speculation than the action of plaster or gypsum on vegetation. Why it should produce such striking results at one time, why it is apparently useless at others, or why it should be beneficial at all, have been problems which the agricultural chemists have found difficult of solution. The columns of some of our cotemporaries have recently been occupied with communications upon this subject, which served to show a lack of chemical knowledge upon the part of the writers, without increasing that of the readers. In cases like this, one direct experiment is worth a host of speculations, and M. Dehérain, of France, has, by his labors in this direction, given us some light upon this much vexed subject. These experiments indicate that the use of plaster is mainly to liberate the potash contained in the mineral constituents of the soil. In the disintegrated rocks of which the soil is composed, potash exists in an insoluble combination. The plaster is sulphate of lime, which is soluble, and when this, in the moist state, is in contact with minerals containing potash in an insoluble form, the lime and potash change places. The potash is liberated, while the lime of the plaster takes its place in the insoluble mineral. This change is effected very rapidly, as it was shown that soil which contained only a trace of potash, gave, 12 hours after the application of plaster, an appreciable amount of that substance. Another effect of plaster has been suggested by Prof. S. W. Johnson in his lectures at the Smithsonian Institution. It has been found by experiment that the presence of certain substances, plaster among the rest, in the juices of a plant, has a marked tendency to prevent evaporation by the leaves. It is of course necessary that a certain amount of the liquid contents of the plant should pass off in this way, but in a very dry time the evaporation may be more rapid than the processes of vegetation demand. The use of plaster upon the soil may enable a crop to withstand a drouth much better than upon unplastered land.

WHAT NEW-YORK IS WORTH.—The assessed valuation of the real and personal property in the State of New-York is officially stated at $1,454,454,817. Of this amount New-York City has more than one-third, or $547,416,030. Kings County in which is included the City of Brooklyn, ranks next in wealth, being valued at $98,147,604. The lowest estimate is for Hamilton Co., which stands at $605,000.—The assessed value is of course much below the real money value. If the war continue through this year on the same scale of expense as now, the

National debt will just about equal the assessed value of the property in New-York State.

Notes from Northern Iowa—Crops—Breaking Prairie, etc.

C. A. Marshall, Howard Co., Iowa, writes to the *American Agriculturist*: The past season may be considered an average one for the farmer. The wheat crop was decidedly above the average in quantity, and its quality extra; a great deal of our Spring wheat weighed 62 lbs. per bushel.—Oats, about an average.—The failures of the season were in hay and corn, owing to the severe drouth. The tame grasses on some prairies hardly paid the expenses of saving, while natural grasses were very light. The corn was a sad failure in most places, the successive frosts having totally ruined half the crop.

Your correspondent inquires about breaking prairie. The man who advises breaking clean prairie after July 1st, is either ignorant of his profession as a farmer, or if a "regular breaker," is guilty of improper motives. I know many "breakers" who, to spin out their breaking season, recommend late breaking, and alas! for the poor stranger who listens to their tale; he will find his sheaves at the next harvest "few and far between." Hazel brush is better broken later. Such is the experience of men who have bought their experience and paid dearly for it. I should recommend breaking any time between May 1st and June 20th, about 4 inches deep, plant no sod crop unless I was so hard up as to borrow a little the first year at a tremendous usury upon the crop of the next. Sow with wheat by all means, though corn does wonders on new ground cross-plowed. (I get my seed wheat free from all weed seeds, and follow with corn the second year.)—Beware of oats on too rich ground; if a moist season, they will lodge.—Keep young cattle enough to eat up all straw and corn stalks, and young colts to consume all the hay you can cut, and if on these rich prairies you do not get rich in a few years, be assured that the fault does not lie more than hundred miles from your own door.

Sowing Fife Wheat in Autumn.

In the last April number of the *American Agriculturist*, page 106, Mr. R. F. Roberts, Racine Co., Wis., communicated the fact that many cultivators in the eastern and southern counties of Wisconsin, and in Lake Co., Ill., were experimenting with Fall-sown Fife wheat, several successful trials having been made during a few years previous. We have now to thank him for a report on the results, derived from extensive observation and inquiry throughout that section. He writes: "Sowing Fife wheat in the Fall has proved an entire failure. In the Autumn of 1862 the experiment was tried extensively, and by many on a large scale. One farmer whose experiment had succeeded admirably the previous year, he having raised 200 bushels of the first quality, sowed 40 acres, and in the Spring, plowed it up and sowed with other grain. It was tried on all kinds of soils. Some sowed at the usual time of putting in winter grain, and it came up finely and promised a good crop. Others sowed late, that it might not sprout before freezing up; but in all except two cases which came under my observation, the results were failures, and the two excepted were not a satisfactory success. Some seeded with Spring-sowed Fife, and some used the product of that sowed the previous Fall, but there was the same failure. Its success depends entirely on the character of the seasons. Fife wheat is not as hardy as any variety of winter wheat. If the ground is covered early with snow which remains on all Winter, this variety will succeed well, producing a much finer quality of grain and a large yield. All with whom I have communicated on the subject, agree that it will not pay to run the risk of such a contingency, especially as when even Fife wheat sowed in the Fall will succeed well, winter wheat will do better."

Notes on Wheat.

Rev. B. S. Schenk, D. D., Editor of the Reformiste Kirchenzeitung, Chambersburg, Pa., in a letter, says. "....I read the *American Agriculturist* with much interest, and frequently practise with profit upon its teachings, both in my small fields, and in the garden....In our fertile Cumberland Valley, wheat yields tolerably well—sometimes unusually so. A 3-acre field of my own sown with the new Red Mediterranean produced 90 bushels of clean wheat. Another plot of 1¾ acres sown with the white Boughton, yielded 50 bushels, exact measure, of clean wheat. The combined *rakings* from both pieces gave 9 bushels, and the offals (screenings?) about 5 bushels more, making the entire product of 4¾ acres, 154 bushels. The "Boughton" is a new wheat here—ripens 5 or 6 days earlier than even the Red Mediterranean, and hence is *the* white wheat for our climate. I had so often tried various white wheats without getting ahead either of the weevil or rust, that I gave up raising it, the last trial being that beautiful variety, the Blue Stem, which, 30 years ago, was the stand-by of the farmers in Centre County, in this State. But it ripens too late for us at present. The Boughton seems to answer very well, has a good, heavy straw, and the yield is very respectable....."

Measurement of Grain Bins.

Joseph W. Wood, Sauk Co., Wis., communicates to the *American Agriculturist* the following convenient method of measuring grain bins, etc. He says; A cubic foot is $\frac{1728}{2150.42}$ of a bushel = .803. Three thousandths of a bushel is less than one-fifth of a pint: therefore to estimate a cubic foot as eight-tenths of a bushel, gives an error of less than one-fifth of a pint, which, in measuring a bin of ordinary size, would be of small account. By this estimate the capacity of any cubical vessel can be readily ascertained, by simply multiplying the number of cubic feet it contains by the decimal .8: Thus, in a bin 8 ft. long, 3 ft. wide, and 6 ft. high, 8x3x6=144 cubic feet, which multiplied by .8 gives 115.2 bushels as the contents. The error in this example amounts to less than half a bushel.——By fixing upon two dimensions of a box or bin, the other can be calculated so that the receptacle shall hold any required amount. For example, a bin is wanted to hold 250 bushels of grain. Suppose it be 8 ft. long, and 6 ft. high: what must be the width? 8x6=48, this multiplied by .8=38.4—that is, one foot of the width of the bin will hold 38.4 bushels, and 250 bushels divided by 38.4 gives 6.5 or 6½ ft. as the required width. By carrying out the decimals, any required exactness can be attained.

It is better to make ourselves loved than feared.

A Plea for Boys.

H. A. Trench, Eaton Co., Mich., writes to the *American Agriculturist*: "Boys are usually eager to swing the axe, the scythe, etc., in imitation of their elders, but they are seldom furnished with tools made to correspond with their strength; consequently, after a few trials they are often discouraged and repelled from such labor. In some instances they are flattered or driven by their inconsiderate parents to labor with tools twice or thrice too heavy, and while thus being trained to industry, their weak bodies are permanently injured, if not dwarfed. Implements for boys are manufactured to a small extent, but few purchase them, and thus manufacturers have little inducement to make or advertise them. Something should be done to remedy this. Let Agricultural Societies offer premiums for the best set of farming tools for boys, and for crops raised by boys with implements adapted to their strength; and let the identical instruments which they used in cultivation, be exhibited with the samples of their produce. Let every Agricultural journal agitate the subject until it is fully before the public.

"In this connection may be mentioned a field of labor well adapted to the juveniles. They almost invariably like to use a team. A large dog or a goat, if properly trained, will furnish considerable draught power. The boys might commence instructing their animals this Winter, by breaking them to draw wood on a sled. The blacksmith can, at a little expense, make three to five steel teeth for a small garden cultivator. Next Spring plant the onions, beets, carrots, etc., in long rows instead of beds, and the boys will take pleasure in driving their teams back and forth, with the cultivator attached, and the weeds will suffer, to the great benefit of the vegetables. It will be no great hardship for them to pull out the few remaining weeds in the rows, while the teams are resting, especially if this be made a condition of their being permitted to do the cultivating. When this becomes an old story, as an additional inducement, allow them, when the garden is cleaned out, to hitch up to the wagon fitted for their use, and take a drive for pleasure.

"If no shrewd manufacturer will take the hint and bring out all necessary apparatus for such operations, it will pay one having a family of boys, to have it done to order. Any good blacksmith can forge out a hoe, shovel, spade, etc., of the right pattern for boys' use."

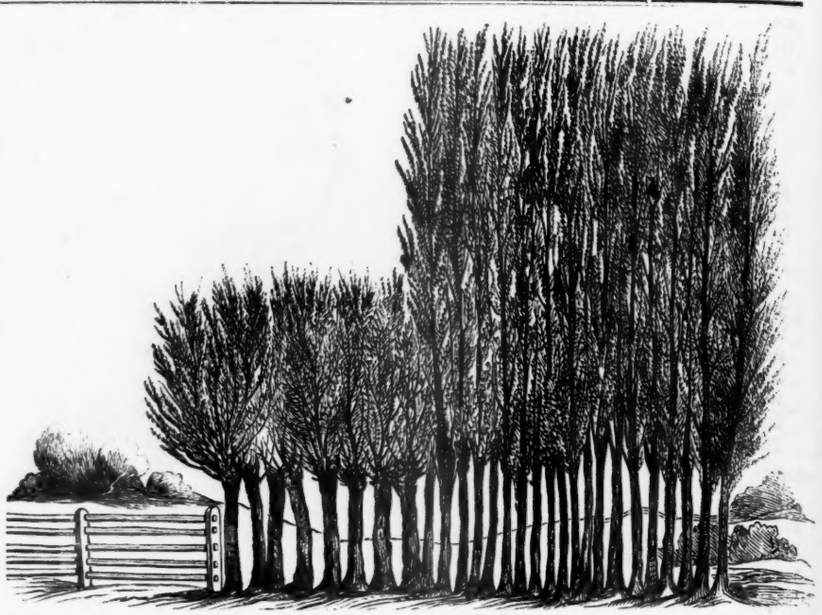
Experience in Artificial Swarming of Bees.

L. L. Fairchild, Dodge Co., Wis., writes to the *American Agriculturist*: "Just before swarming time last season, I purchased a large old fashioned box hive, well filled with bees and honey. As there was no disposition to swarm shown, (though a new stock could apparently be easily spared,) I exchanged the location with a weak stock that had cast two large swarms. By so doing, the weak stock was made strong in numbers, and was soon at work in the cap boxes. In some three weeks, the purchased stock had largely increased, and the outside of the hive was black with the outhanging bees. I then took two frames from each of three Langstroth hives containing early swarms, and placed the frames containing brood, eggs and stores in a new hive, and added four more frames partly filled with empty combs,

that I had saved the year before. This hive I placed on the stand occupied by the purchased stock, and transferred that to a new location. The bees that had left the old hive, and were out in the fields, having marked this location, returned to it and soon furnished the new hive with a goodly family. They immediately started nine queen cells. I had a young queen in a single-frame observing hive, not fertilized. Waiting a few days, I found her laying eggs, and concluded I would introduce her into the queenless hive, and thus save time. I put her in a wire cage and laid her over the hole in the honey board. Next day I took off the honey board, not doubting that all was right, cut out all the queen cells, and took up the cage containing the queen. Behold she was dead! Here was a dilemma. No queen, and all the means the bees had of raising one destroyed. What was to be done? After cogitating, I opened another hive and took out a frame containing eggs and brood in various stages, and introduced it into the queenless family. They commenced once more to supply their loss, by constructing queen cells. A day or two after, in examining a swarm that had been transferred from a box to a movable frame hive, and that contained a fertile queen, I found a card with two sealed queen cells, nearly mature. This, I also introduced into the motherless stock. Shortly after, I had the satisfaction of seeing the bees of this hive working with increased vigor. On opening the hive, I found they had matured a queen, and she had already deposited several thousand eggs. This happened late in the season, and having had an unfavorable spell of weather, part of my stocks having destroyed their drones, I feared the queen would not be able to meet the drones. My fears were not realized. Soon after, we had a few days of good weather, and the bees rapidly accumulated stores, and I see no reason now why it is not one of my best hives. It is not so heavy as some, but still, I think it has honey enough to carry it safely through the Winter.

Improvement of Highway Borders.

S. Edwards Todd says in the Country Gentleman, that in many portions of Onondaga Co., N. Y., the soil on each side of the beaten track has been neatly graded, seeded with grass, and all the stones and rubbish removed, and a good crop of hay is annually cut. In some localities visited by him, which had just been mowed, he judged there would be not less than two or three tons of good hay per acre. This of course necessitates the mutual agreement of all the residents of a neighborhood, to keep their stock out of the highway. It is true that by a law of this State, no one has a right to pasture cattle along the road adjoining the field of another owner, yet few would care to improve their own highway borders, if compelled to go to law to protect their rights. There must therefore be a general, voluntary observance of the regulation, to have the plan succeed. Where a farmer has a long line of highway running through his lands, it will pay well to bring it into meadow. Leisure time during the present Winter may be well employed in grading this ground and removing obstructions, preparatory to seeding in Spring with timothy and clover, or other grass suitable to the locality. Such an improvement would add greatly to the attractiveness, and it would thus increase the value and salableness of a farm.



More Notes on the White Willow.

Unless considerable care be taken, there is danger of confounding this with some of the inferior or worthless varieties. The smooth, light greyish bark, only slightly scarred where the leaves grew, serves tolerably to distinguish the cuttings of the white from those of the yellow variety which are of a bright yellow color; also from those of the Ozier which are of a reddish grey, and from the black and swamp willows which are more deeply scarred, and of a darker hue. The *habit* of the tree, however, is the marked feature: the stems are more erect, the branches starting from the main stems at a less angle, and the tree throughout, presents a trimmer and more regular look. In the December *Agriculturist* we referred to the use of this willow at the West as a live fence, and for timber. The engraving herewith presented, represents some trees well grown in a fence, (a little too stiff, bare-stemmed, and poplar-like,) and some which have been topped. Had but 3 or 4 shoots been allowed to grow after topping, they would have made a much larger growth. How many shoots are to be left, and how long they are to be allowed to grow, depend upon the purposes for which the wood is desired. An enumeration of some of the uses of this tree may be profitable to many of our readers.

For Powder.—So extensively is the white willow used for making charcoal for the manufacture of gunpowder, and so much is this species (*Salix alba*, which includes the yellow willow,) preferred, that throughout the districts where it is raised, particularly on the Connecticut and Delaware rivers, it is known as "Powder willow." The wood is cut 8 feet long and sold to the manufacturers, or it is bought standing and cut by them. The yellow willow is equally good, but it does not make so rapid growth.

For Basket, or other wicker work, this willow is used in both Europe and this country. It is especially valuable where stout coarse wicker-work is made, and for the coarse parts of very fine work. For this purpose, the shoots are cut in Spring when the bark peels easily. The many applications of wicker-work are not understood in this country, but we think when once the willow becomes common, where timber for boards is scarce, it will be valued as it is in many parts of Europe. Movable hurdles for fencing yards, sheep-folds, grain-stacks, etc., may be constructed of it, and they possess great strength and durability. They are made in lengths of about 8 feet, with a width of 4 feet, and are woven so closely that even a rabbit can not go through. Similar wicker-work makes very good wagon bodies, which may be constructed like a huge basket, or be made in separate pieces to be put together and held in place by stakes and withes. Other uses of a similar character will occur to our readers.

Farm Roads.—Where the ground is not plowed every year or two close to a live willow fence, the ground within 12 to 16 feet becomes filled with roots; then the lower branches being lopped off, this space forms, wherever we have observed it, an excellent cart path, good at all seasons. No heavily loaded cart will cut through the surface. Where farm roads cross wet swales or soft ground, this will afford a great convenience.

Corduroy roads and Causeways.—Roads must often be made across sinking ground, where stones and earth are swallowed up, and even where common corduroy will not stand long. The willow is well adapted for this. If the shoots of two years growth be taken, and laid thickly in the road-bed, and then covered with sufficient earth to make a smooth road, not only will the willow answer as well as any other wood, but the sticks will sprout and grow from each end, and the road-way will be filled with a mass of living roots, binding the whole together. We saw causeways made in this way of the white willow on Duck Island, in the Delaware, on the farm of Mr. Joseph Reader, who strongly advocates the use of this kind of road through the sloughs, which are such impediments to travel on prairies. After our well-remembered experience during "a wet spell" on the prairie, both by day and night, we may be excused for pressing this matter earnestly upon the consideration of western men. In our view the Counties ought at once to lay out roads and provide at least for causeways crossing the sloughs, which shall be good and firm at all seasons.—The bark of the willow is used for *tanning* in Europe, where also woolen fabrics or yarn are sometimes dyed of a sort of butternut color, (not a favorite hue in these times for

men's garments, this side of Dixie.) Another use to which the leaves are put in Northern Europe,—namely, as winter fodder for sheep and goats,—will be no recommendation of the plant.

Necessity of Developing Agriculture.

The following truthful and eloquent extract from the address of Alexander H. Bullock, before the Bristol County Fair, (Mass.,) deserves to be generally considered. It is of wider application than the State to which it refers:

"We have in Massachusetts about the same proportion of persons engaged in the cultivation of the earth, as is returned by the English abstracts, and the smallest extent of the products of the land which would be proportionate to the magnitude of other departments, should be, not forty millions, but a hundred millions. The agriculture of the State has every inducement for a larger development, which can be derived from the most minute organization of its industry, and from the most complete expansion of its powers of consumption. And the time has now come when manufactures and trade will require but little further encouragement,—they will take care of themselves,—but it is agriculture which must achieve higher advances, or degeneracy will begin its work. If we expect to maintain the position we have acquired in the community of States, or to hold unimpaired the adjustment and symmetry of our social character, we must preserve in its full vigor the element of an agricultural population,—responsive to the growth of other departments, and irradiating the future, as it has irradiated the past, with the lustre of its patriotism and integrity, its sobriety and frugality, its virtue and religion. And especially in the present epoch of uncertainty and change, when the gilded prizes of trade so frequently crumble to ashes, and the riches of skill and art so easily take to themselves wings, let us hope that the fifty thousand farmers of the State will hold fast to their profession—that they will remain themselves, and that others will join them in the safe and serene paths that were marked out by the Divine hand in the beginning of all things. With a commonwealth thus organized and classified—the masterly energies and comprehensive grasp of its manufactures, and arts, and commerce, resting on the pure and solid base of an unfailing and increasing agriculture—and all blending in the culture of those charities which impart even to present life a beneficence that is imperishable—we may fondly hope to repeat, in our experience from year to year, the happy and lofty climax of the poet:

"Man is the noblest plant this realm supplies,
And souls are ripened in these Northern skies."

Some More Cabbage Talk.

When the stump from which a head of early cabbage has been removed, is left in the ground, it will not unfrequently form several other and smaller heads. In this case the axillary buds mentioned in December *Agriculturist*, grow and form heads. For convenience of reference and comparison, we introduce the same figure again. Some of the uppermost buds (fig. 1, *b*), develop in this way, and make a second attempt to provide for an abundance of flowers the next Spring. When cabbage stumps are set out in Spring these buds develop and form branches which, when young and tender, are used as food. In a curious variety of the cabbage called

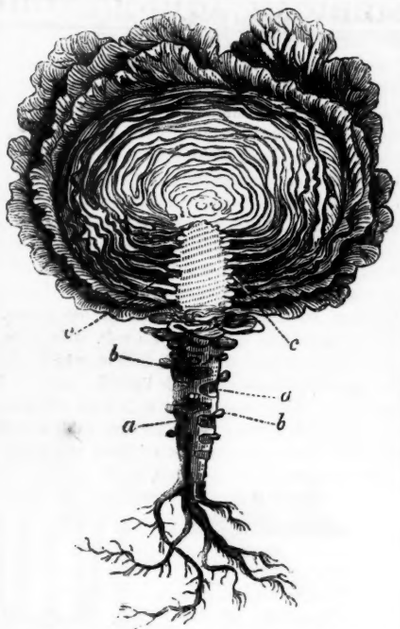


Fig. 1.—AXILLARY BUDS ON THE CABBAGE.

Brussels Sprouts, the stem grows much taller than in the ordinary cabbage, and the *buds*, which in cabbages are very small, are here as large as walnuts, and are like little cabbage heads distributed all along the stem, as is shown in fig. 2. No compact head is formed at the top of the stem, but it would seem that the material which in the cabbage goes to form one large head, is here distributed among a great number of small ones. Brussels Sprouts have long been cultivated at the place from which they are named, and are supposed to have originated there. They are but little grown in this country, but in Europe the little heads, or sprouts, are considered a great delicacy. The well-grown specimen from which the drawing is taken, was sent to us by Mr. William Erwood, of Long-Island.

Fig. 2.—BRUSSELS SPROUTS.

The Kale, or Borecole which is so generally seen in our markets in Winter, is also a variety of cabbage. It, however, forms no head, but in its place has a cluster of loose leaves upon the top of the stem, which, after they have been frozen, form very good greens. This variety is nearly like the cabbage in its natural state.

Kohl-Rabi, or the Turnip-cabbage, as it is sometimes called, is a very curious variety of the cabbage. Like the Kale it does not make any head; and the stem, instead of elongating as in the other varieties, swells out just above the root into a flattened turnip shaped body, which is the eatable portion. Upon examination it will be found to be just like a depressed cabbage stalk, with broad scars marking the places of the leaves. Burr, in his work upon garden vegetables, singularly enough classes this with the esculent roots. A slight inspection will show that it is a stem and not a root. The statement which has been going the rounds of the papers that it is a cross between the turnip and cauliflower, is simply nonsense. It is only a variety of the cabbage with an unusual shaped stem. The plant should grow quickly and be used while young and tender, when it is a very acceptable vegetable. It hardens as it matures.

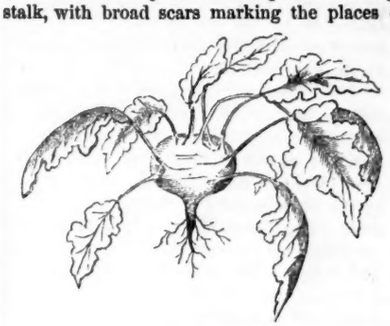


Fig. 3.—KOHL-RABI.

Air and Ocean—Interesting Items.

The air is made up of a mixture of two gases, oxygen and nitrogen, and it always contains considerably watery vapor and carbonic acid. In his new work on Chemistry, Prof. Youmans states, that if all the air were reduced to its average density at the earth's surface, it would extend about five miles high, and that if the above constituents were arranged in layers one over the other, we should have first, at the bottom, a bed of water all over the earth's surface 5 *inches* deep; next a layer of carbonic acid 13 *feet* deep; next above, a layer of oxygen gas about 1 *mile* deep; and above this a layer of nitrogen gas about 4 *miles* deep. This will help the memory.——SEA WATER contains about 4 *ounces* of salt in every gallon. Estimating the ocean to average 2 miles in depth, the salt if separated in a solid bed would line the bottom of the entire ocean to a depth of 140 feet.

NEW-JERSEY TEA.—The leaves of this plant have recently been analyzed by Prof. Gibbs, of the Lawrence Scientific School at Cambridge, and no *Thein* or other analogous substance was found. As it is to Thein that tea owes its peculiar value, it will be seen that the New-Jersey article is no nearer being a substitute for it than many other plants from which "herb drink" is made. To those who take tea, as many people

do, only as a warm and sweet beverage, Jersey tea, sage, blackberry leaves, and many other cheap substitutes, are acceptable.—A plain and an easy method of distinguishing the "New-Jersey" from the genuine tea, even when mixed with it, was given in the December *Agriculturist*.

Curious and Useful Notes on Lime.

The lime we use to fertilize our fields, and to plaster our dwellings, is an interesting as well as a useful substance. Perhaps a little knowledge of what it is, and how it behaves, will invest the walls with other attractions than mere whiteness, and divert the attention while engaged in the disagreeable work of sowing lime broadcast on a windy day.——If we take in our hand a lump of caustic or fresh burned lime weighing 28 ounces, we are really holding 20 ounces of metal, which is much lighter than lead, and a little harder. The chemist calls this metal *calcium*. The other 8 ounces is a substance named *oxygen*, (which makes up 8 ounces in every 9 ounces of pure water, and about 8 ounces in every 64 ounces of air.) One atom of the oxygen joins one atom of the calcium, forming what the chemist calls *oxide of calcium*, which is lime. To abbreviate it, we write CaO., the Ca standing for the calcium metal, and the O for the oxygen. The calcium atom is 2½ times heavier than the oxygen atom. The mass of lime we hold, is made up of innumerable pairs of these atoms. When a piece of wood is burned or rots in the air, each minute atom of carbon (coal) in the wood unites with two atoms of oxygen in the air, and floats away unseen. This gas, called *carbonic acid*, is written CO_2, the C standing for *one* atom of carbon or coal, and the O_2 for *two* atoms of oxygen. (It is the same gas that bubbles up in soda water, and the same that expands the holes in a loaf of bread or cake, or in griddle cakes, to make them light.)

Now hold some fresh lime over the burning wood, and an atom of lime (CaO) will catch and hold an atom of the escaping carbonic acid (CO_2), and we then get a new compound (CaO,CO_2) which is called *carbonate of lime*, made up, as you see, of calcium metal and oxygen, with carbon and 2 more atoms of oxygen,—all united closely. This compound is the same as white chalk. A number of these atoms compacted into a solid mass, would make white marble. Color it in streaks or veins with a little metallic oxide, and it is the variegated Italian marble. Color it uniformly of a dark or brownish hue, and it is our common limestone. Remember, then, that *chalk*, *marble*, and *limestone*, are composed of *the same elements*, differing mainly in their compactness, and in having a little coloring matter in the last two.

If we strongly heat limestone, marble, or chalk, in a kiln, or fire, the carbonic acid (CO_2) is driven off as an invisible gas, and only lime (CaO) remains. This is the strong, caustic or quick lime. If long exposed to the air, it extracts from it the floating carbonic acid, and forms fine grains of carbonate of lime again; new heating makes it strong or caustic again.

This caustic or fresh lime has strong alkaline qualities, like those of potash. In its effort to get carbonic acid for which it has a great liking or affinity, it destroys the flesh; it separates the elements of all vegetable substances, such as plants, roots, muck, manures, etc., setting free the atoms of the old plants to enter into, nourish and build up the new growing plants.

We said that lime is *alkaline*, resembling potash and soda. There is another class of substances having opposite properties called *acids*. Vinegar, lemon juice, and oil of vitriol, are examples. The acids and alkalies neutralize or destroy each others' active properties, and unite together forming compounds (called salts), which are inert, often tasteless. Sour vinegar unites with alkaline soda, and forms a simple neutral salt. Almost all vegetable matters when decaying in the soil, especially if it be wet, form some acid substances. These dark colored acids, are called humic acid, crenic acid, etc., and we add lime to neutralize or destroy them, and thus sweeten the soil. So, then, when sowing the lime, the farmer may be thinking about the elements of the lime, its metal and its oxygen, and what offices it is to perform in the soil. Remember what is here said, and at another time we may talk of that other very different compound of lime, called plaster of Paris, and how it acts on the soil.

ABOUT MORTAR.—Sand, called *silica* by the chemist, is in reality a kind of acid, which unites with alkalies. It is made up of one atom of a brown substance called *silicium* (Si), united with three atoms of oxygen, thus, SiO_3. Sand or silica and fresh lime mixed together, in time unite and form a hard salt.—*Mortar* is a mixture of sand, lime and water. The lime continues to attract carbonic acid from the air which displaces the water, and the mortar cement grows harder with age. So, also, it is probable that the silica slowly unites with the lime, forming the silicate of lime (CaO,SiO_3,) which makes the mortar harder still. Two atoms of Aluminum, a metal, unite with three atoms of Oxygen, (Al_2O_3), and this with silica forms *Clay*, (Al_2O_3,SiO_3). *Hydraulic Cement*, which hardens under water, consists mainly of lime, clay and silica. When wet together, these form a double silicate of lime and alumina, and absorb much water. This is not a very definite compound, but is probably $CaO,Al_2O_32SiO_3+12HO$.

SLAKING LIME.—If we add water to fresh burned stone lime, every 28 pounds of lime will unite with 9 pounds of water, to form a new compound called hydrated lime. This falls to pieces. The condensation of the water and lime gives out a large amount of heat which was before latent or concealed. After long exposure, lime gets this water from the air, and falls to pieces or is air-slaked. As above explained, the carbonic acid it gets at the same time, injures it for mortar, and for spreading on land. The best way is, to always get fresh burned lime, that which is in lumps, and not yet watered or carbonated by the air.—It will be seen also, that in every 37 lbs. of slaked lime a man buys, he gets 9 lbs. of water—quite an item where it is to be hauled any distance. Twenty eight tons of fresh lime contains as much real lime, as 37 tons of slaked lime, or 50 tons of fully carbonated lime.

Make a Snow Plow.

"D." of North Branch, N. J., sends to the *Agriculturist* the following timely suggestion: "I am often distressed at the amount of inconvenience occasioned by neglecting to open paths through snow, so as to secure good walking, not only for visitors in approaching the front door, but (and quite as important,) for members of the family in excursions to the wood-pile, barn, cattle, pig, and poultry yards, etc. Of course, every body would prefer a good path, but it is tedious and hard work to make it, and so it is too generally left among the things undone. I long ago adopted an expedient by which I turned the *work* into *play*.

I took two pieces of inch-and-a-half plank, about two-and-a-half feet long, and ten inches wide. I beveled one end of each, so that when stood on edge and nailed together they presented the appearance of the letter V, flaring from a point at the junction towards the other extremity of the affair, so as to give an opening of about two feet. I then nailed a covering, making a platform. I had the under edges shod with old wagon tire, welded at the point, and turned up about the thickness of the iron. One third of the way backward from the point I fastened the extremities of an iron rod bent into pretty much the shape of a bucket handle, in the center of which rod is a stationary ring for securing a whiffletree.

Such is the *machine*. If 'the ground is all covered with snow' to-morrow, I need only hook a horse to it, mount the platform, and go ahead, opening a clean path to the ground. The permanent investment amounts to a mere trifle. The advantages are great. Fifteen minutes are enough to make all the paths required on any ordinary premises, and the labor is not worth naming.—If one such implement were kept in a village, every body's paths could be made clear to the store, post-office, school-house, and church, through all ordinary snows, without back-aches or pocket-aches; and depend upon it, if the thing once becomes an experiment, it will soon pass into an institution, both of the farm and of the neighborhood."

[We agree with "D." that a snow plow is an institution which should be more common than it is. We recollect passing a part of a Winter in a country town where the paths were opened by a snow plow, and can testify to the thorough manner in which it does the work.—ED.]

Sheep-Farming in South America—A Chance for Enterprising Young Men.

Having recently returned from the Argentine Republic, I am able to give some account of the extensive business of sheep-farming as it is carried on in the Southern Wool Zone of this continent, which may interest the readers of the *American Agriculturist*, particularly as wool-growing has of late increased so much in importance in our own country.

The sheep-raising country of South America consists mainly of vast plains or "pampas," resembling our western prairies in extent and bleakness, but not in the general character of their herbage. The grass is green throughout the year, except in dry times, and is much finer than that of our prairies. In the Summer (November to March) these pampas are covered by an immense growth of plants like thistles, the stalks of which are so high in some places as to hide a man on horseback from view. These are very troublesome to sheep-raisers, because they make it hard to watch the sheep, and because the burs get into the wool. In Winter the stalks die, and sheep and cattle eat the green leaves at the ground. On these plains no trees are to be seen, except a few small ones around the houses. Streams of running water are scarce, hence land on the rivers is in greater demand, and commands a much higher price than in the interior. Here and there on the pampas are small lakes or "lagunas," where the cattle get water, but in time of drought most of them dry

up, and cattle sometimes have to travel a hundred miles for water. I saw one large lake, the bottom of which was whitened by the bones of cattle and horses which had come there at such a time; these rushed madly into the water, and being weak and exhausted, could not extricate themselves from the mud. Sheep get along with but very little water, and when the grass is almost entirely burnt up by the sun, nothing green to be seen, and the clouds of dust stifle one, if they can get a pint of water a day, they will live for weeks. The deprivation they can endure is almost incredible.

Sheep-raising there is generally done on shares. A large farm, or "estancia," consisting of from three to eight square leagues, (5,760 acres is a square league,) is divided into sections, and on each section is built a small one-story house, of mud or sun-dried brick, with one or two rooms, which is let by the owner or owners of the estancia to a person who takes care of a flock of his sheep on shares. The shepherd, or "puestero," as he is called, on entering into this contract, either buys one-third of a flock of about 1,500 to commence with, or pays to the owner interest at the rate of from 9 to 15 per cent. on their value. The contract is for three years, and in this time the flock should double. The shepherd gets one-third of the wool and one-third of the increase each year. He pays a low rent for his house, and has all the mutton he wants to kill. The sales of the wool for the first two years pay all his household expenses, even if he have a family, and leave him a good surplus the third. He will then, if purchaser of one-third at the start, have about 1,000 sheep of his own, and can form, if he chooses, a new contract with the owner of the estancia, on halves for one year, and so on until his flocks increase, and he finally becomes manager of several flocks. Some poor grades of sheep may be taken on thirds without having to buy any at the start; but a share has always to be bought in flocks producing a good quality of wool. Importations of German Merinos, within the last 8 or 10 years, have much improved the character of many flocks. Large importations of blooded sheep arrive often, and sell at high figures. I saw a ram sold for $650, (gold,) $1,000 refused for another, and ewes sold at $100 to $80 each. For medium native flocks, well bred, sold "in a cut",—that is, rams, wethers, ewes, and lambs, together,—from $1 50 to $3 50 (gold) is paid; if all ewes, somewhat more.

The sheep have no covered shelter throughout the year, their only protection being merely wire, or rarely narrow board inclosures called "corrals," in which they are shut at night. The herdsman is on horseback with them all day. The section limits are marked out, and he must see that they do not get off their own ground, or mix with other flocks. To distinguish and separate them, they are all marked by cuts in the ears. Stormy and rainy nights the sheep are kept out of the corral, on the grass, lest the mud damage the wool, and then the shepherds have to remain up all night, occasionally riding around them, or "rounding them up," to prevent their straying off and getting scattered and lost. The storms are sometimes very severe, and the strong winds, or "pamperos," in their furious course oftentimes cause considerable confusion and loss in a flock, as the sheep start and run with the wind, so that it is impossible to stop them. Many lambs are thus lost, and also by the exposure in Winter, when the ewes lamb. On a cold night the shepherd has to get up three or four times to walk through the flock and see if any lambs have come, and if so, take them into the house and keep them warm until morning, when they are taken to the flock, and their mothers easily find them. Winter is considered a better time for lambing than in Summer, when the heat is so oppressive that the ewes will leave their young and let them die. It may be seen how many lambs die when a flock only doubles itself in three years, and yet some of the ewes lamb twice a year. The droughts or "secos" are also great drawbacks, the entire increase of the flock sometimes dying from that cause alone. As a guard against the disastrous results of these secos, on the best Estancias each puestero has planted near his house two or three acres of "Alfalfa," or Lucerne, which strikes its roots to an amazing depth, and thus is able to withstand severe dry weather. They can cut it once a month, and get a very good yield for five or six months of Spring or Summer. It is excellent feed, and in a drought the only salvation of the flock. The sheep require constant care, such as would only be given by an interested party; it is for this reason that the business is done on shares, and not by hired laborers. Many young men (a good many Americans) are engaged in this sheep-farming, living alone in these "puestero houses," who start on thirds and follow it up until they gain a competence in many less years than a clerk in almost any commercial business starting on the same capital. Irishmen (where are they not?) who went there 20 years ago without a cent, are now the proud owners of thousands of acres and tens of thousands of sheep. He who goes must be prepared for bachelor's life in earnest, washing and cooking for himself, making his own bed, sweeping out the house, etc. By the way, they have no coal or wood there, but burn sheep manure or "bosta," cut in the "corrals" and dried in the sun. It emits no offensive odor, makes a very hot fire, but you have to keep adding more and raking out all the time. It is not *quite* as good as coal.

OVEJA.

Cheese-making—Manufactories and Associations—Their Mode of Operation, and Advantages.

Cheese manufacture is making most interesting progress. For many years the business of cheese-*selling* has controlled cheese-*making*, in some parts of the country, by associating the dairymen to a certain degree, so that not only has a steady demand been created for certain kinds of cheese, but very uniform and remunerative prices have been obtained by the makers. A class of merchants, whom we will call Cheese Factors, residing in the district where the cheeses are produced, engage the dairymen to make cheeses of a certain character, and these factors enter the market with the products of perhaps a score of dairies—not as speculators but as producers.

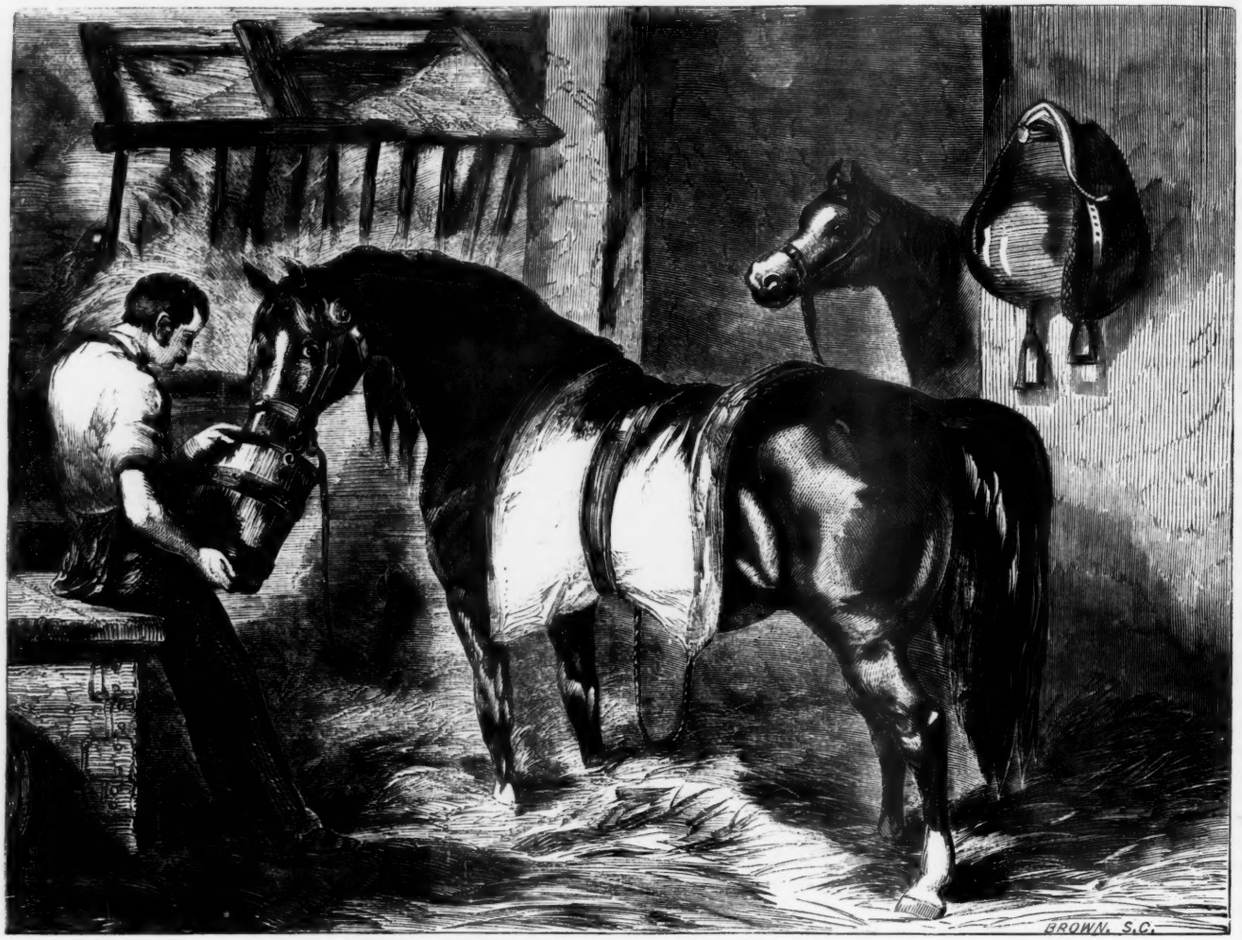
The cheeses are made as nearly of a uniform size as is possible in families, and delivered to the factor when a few weeks old. All the dairies which supply cheeses to the same factor, receive accurate directions from him how to scald the curd, how deeply to color, and how to finish the cheeses. Generally, also, we believe the dairy supplies of boxes, bandages, etc., are to be obtained from the factors. These cheese-merchants store the cheeses in large quantities, assort them, brand the boxes, and watching the market, are enabled to fill contracts for shipment, or take advantage of a rise in prices, with great success. The cheeses are sometimes sold on commission, but are usually bought by factors or country dealers directly from the farmers. There is, however, always a great difference in cheeses made by different persons, and too often in those made in the same dairy, however great the care of the factor in frequently visiting the dairies supplying his stock.

We recently visited part of the dairy region of the "Western Reserve," Ohio, (where formerly the system of receiving the *curd* from the farmers, and making and curing the cheeses at a "factory," was tried and finally given up.) Throughout this region, and also extensively in the State of New-York, the much superior system of receiving the *milk*, morning and night, and conducting the entire process at the factory, is rapidly gaining in favor with the farmers. These establishments are known as "Cheese Factories" or "Associated Dairies." They are conducted on two totally different business methods, but in their management of the milk, curd, and cheeses, they are very much alike. An "Associated Dairy" is managed by the farmers who supply the milk; they are united as a business firm or a joint stock company. The association puts up the dairy buildings, hires the dairy-folk and business agent, and divides the profits in proportion to the stock owned and milk furnished. The other class of establishments are owned and managed by individuals. In some cases these persons buy the milk brought to them, at a stipulated price per gallon. Others receive *one cent* per pound on the cheese made, to cover the entire cost of *labor* up to the time the cheeses are ready for shipment. When the cheeses are sold, the cost of salt, rennet, bandages and boxes, and of transportation and other expenses of selling, together with the one cent per pound for labor and supervision, is deducted; the net proceeds are divided among the farmers, in proportion to the amount of milk furnished by each.

The price which "Factory-made cheese" commands in this market, is 2 to 3 cents per pound more than can be realized by the private dairyman. The expenses of manufacture, even allowing 1 cent per pound for labor, are greatly reduced, and the result is not only a pecuniary gain to the farmer, but a relief from all the labor of the dairy, except washing the milk-pails. There are, however, several difficulties. People, even farmers, are not all honest. Some will water their milk, either after it is drawn, or in the watery messes fed to the cows. The milk may be filthy and sometimes sour rapidly, owing to uncleanliness of the cows or milk-pails, or the length of time which intervenes between the milking and its delivery. So dissatisfactions will doubtless arise, and few associations continue long without *some* hard feelings.

The particulars of the manufacture we can not discuss in this article. There is, however, no reason why in every cheese-making community there may not be one or more factories established. Doubtless the "Associated Dairy" principle is best for the farmers if well managed, and if some of them are not too tricky. The cheese is made on the well-established principles recognized in all good dairies, and on so large a scale that greater uniformity and a superior character is the invariable result. This it is seen is appreciated in the market, and will rapidly work a great change in our dairy system.

JUSTICE gives to every one according to his due, and provides that injury be done to no one.



THE FAVORITE HORSE.— *Engraved for the American Agriculturist.*

A Good Horse—Notes on Thorough-Breds.

The mental and physical qualities of a good horse are too well known to need enumeration. For the former we love him, call him noble, faithful, generous, willing, and kind, while his strength, endurance, and speed, make him a most valuable servant; and it is only in the abuse of his gifts that any thing but good comes to man. Mentally the horse has few equals among the brutes, and among horses, the thorough-bred exhibits the highest intelligence and quickness of perception—accommodating himself most readily to the exigences of the moment, whatever they may be; avoiding difficulties, and extricating himself from them when unavoidably encountered. The ability to be vicious, whether brought into exercise or not, may be classed among the *moral* qualities of a horse, as distinguished from the intellectual; so also what is called honesty and its opposite treachery, obstiveness and patience, with many others. The thorough-bred horse is also distinguished in these respects, and whether the good or evil traits be developed, depends almost wholly upon the men with whom he associates. In his physical nature the thorough-bred is universally recognised as the best of this greatly varying species. In fact, it may be asserted that in every respect, in every part of the world, (except perhaps within the arctic circle,) for every purpose (allowance being made for weight) he has no equal among horses. His bone is firmest and finest in texture, his muscle is tensest and most elastic, his sinews hardest and most firmly attached, his frame close knit and compact, his nerves high strung but under his control, his brain large, his chest capacious, and his form the perfection of equine symmetry. A sentiment, which horse-men the world over will endorse, is attributed to Sir John Fenwick, who uttered it some 200 years ago. It is this: "Every thorough-bred, or 'blood-horse,' even if he be the meanest hack that ever came out of Barbary, is so infinitely superior in courage, stoutness, and quality, both of bone and sinew, as well as blood, to the best cold-blooded mare that ever went on a shodden hoof, that he can not fail to improve her stock, whatever be his comparative standing among racers."

A thorough-bred or blood horse, be it remembered, is one descended, through a line of English racers, from the blood of the Desert, including the pure Arabian, and also the Barb, Turk, Persian, and Syrian, which all possess the same general characteristics, and trace their origin to Arab blood or to crosses with it. No horse is recognized as thorough-bred which does not bear a pedigree going back without a flaw to this Oriental source. The presence of any "cold blood," as that of all other horses is called, even though there be no more than 1-32nd or 1-64th, vitiates the purity of the blood of any animal, and he with his progeny loses all title to this proud designation. The thorough-bred, while we claim for him symmetry and beauty of form, abstractly considered, does not possess the style, elegance, and solidity, prized in a carriage horse; nor that practical business look, combining an appearance of strength and speed, which we demand in a roadster; he lacks also the massive strength which weight gives, and which we value in the horse of all work, no less when he is used in the dray, than before the plow. The "terrible glory of his nostrils" he possesses, but the "neck clothed with thunder" belongs more peculiarly to some of the heavier breeds. There is, then, an elegance of strength and style, a certain pride of action and beauty of fitness for certain kinds of labor, which give great value to other breeds, particularly when their blood is blended with that of the thorough-bred. The fine engraving which we present, shows very strikingly these points of beauty and elegance alluded to, combined with some of those fine qualities which indicate "blood," and affords us an opportunity to enforce the lesson that blood on the part of the sire serves to develop and refine the good qualities of the dam as imparted to their offspring. The points to be sought in a breeding mare are: size, beauty of form, together with capacity of barrel and pelvis, freedom from constitutional or hereditary defects, as well as from a perverse irritability of disposition. In the horse, let us remember that the more blood we have, the better, and that a thorough-bred is of course better than the best cold-blooded or 99-100ths-blooded horse we can breed from. The good points of the Morgans and Black-Hawks, which are so much used now-a-days as stock-getters, are chiefly due to blood, and were we to return to the use of thorough-breds so much as possible, we should at once see a commensurate improvement in our stock. The use of thorough-bred stallions ought to be so persistently encouraged by our agricultural societies, that all who can will secure their services,

Herd Records—Breeders' Association.

There has been in existence for several years an "Association of Breeders of thorough-bred Neat Stock," which has quietly accomplished at least the beginning of what promises to be of great service to American farmers. Among the members are breeders of all the prominent breeds of neat cattle, particularly of Short-Horns, Devons, Ayrshires, and Alderneys. It was generally admitted that English and American Short-Horn Herd-Books contained the names and pedigrees of many *grade* animals, in some cases at least, inserted in a manner likely to deceive and lead to the blending of impure blood with that of great value. The same was to a certain extent true of the Devon Herd-Book, the pedigrees resting upon the representations of the owners of the animals; while for the other breeds there existed no Herd-Books. This Association therefore determined to keep a *record* of animals *belonging to its members*, and to admit no pedigrees to be recorded which should not first receive the approval of the Association after examination by competent and conscientious committees, to whom should be presented the documentary evidence, bills of sale, of importation, etc., going to establish that the animals in question descended from those recognized as of pure blood in Great Britain. Where necessary, the committees were expected to examine the animals themselves, and to reject those showing marks of impurity. From time to time the committees reported; their reports were thoroughly canvassed by the society; doubtful pedigrees were referred back for further investigation, and the reports of the committees on Short-Horns, Devons, and Ayrshires are now published in a single volume.

The Short-Horn Herd-Record contains the approved pedigrees of 71 bulls and 81 cows.

The Devon Herd Record.—The Devon breeders became members of this Association so generally, that the publisher of the American Devon Herd-Book, Sanford Howard, of Boston, turned his papers over to the Society, giving it his influence and co-operation. The Devon Herd-Book is now issued under the direction and subject to the rules of this Association—the labor of arranging and editing having been done by Horace M. Sessions, of South Wilbraham, Mass. 152 bulls and 351 cows are recorded.

The Ayrshire Herd Record.—For several years the Ayrshire breeders of Scotland and England, have been discussing the subject of an Ayrshire Herd-Book, but hitherto none has been put forth. It is to the credit of American farmers that this work has been done here, and so well done. The pedigrees of 79 bulls and of 217 cows are recorded, representing the herds of 129 breeders.

It is much to be regretted that the committee on Alderney or Jersey cattle did not report. The reason we presume to be that so many *grade* animals have been sold as thorough-breds, that the labor of proving which ones had reliable pedigrees tracing back to the Island of Jersey, was so difficult, and the odium to be encountered, where animals were thrown out, so great, that the committee failed in their duty to the Association and to the country. If only fifty animals could be reported as unquestionably of pure blood, they and their owners should have the credit of it. The "Herd Record" and circulars of the Association, may be obtained through Henry A. Dyer, Secretary, at Hartford, Conn.

Best Time to Paint Houses.—Experiments have indicated that paint on surfaces exposed to the sun, will be much more durable if applied in Autumn or Spring, than if put on during hot weather. In cool weather it dries slowly, forms a hard glossy coat, tough like glass, while if applied in warm weather, the oil strikes into the wood, leaving the paint so dry that it is rapidly beaten off by rains.

Chinese Sheep.

A number of inquiries have been made recently in regard to these sheep. As yet the breed has figured very little in our Agriculture, and has few advocates. It is now several years since we have seen any, and so little has transpired in regard to them, that we have concluded that the extravagant expectations, which were entertained of them, have not been realized. This may be a mistake however. There is no doubt that the ewes are exceedingly prolific, breeding once in six months and bearing twins, triplets, or even four lambs at a birth. They begin to breed also when only a few months old. The size is good, and the mutton has been pronounced good, perhaps by interested parties. The writer has eaten it with satisfaction. The wool is exceedingly white, glossy, coarse and hairy, and there is not a great deal of it. These sheep are hornless, lop-eared, long and bare-legged, with great masses of fat upon their rumps, and having short but very broad and fat tails. The great impulse wool-growing is receiving, on account of the high price of wool, perhaps prompts the inquiries we receive. Whoever expects profit from these sheep as wool producers, will be disappointed, but for mutton and lambs, we know no reason why they may not be raised with advantage. We shall be glad to hear from any of the readers of the *Agriculturist* who can give us *facts* concerning this, or kindred breeds of sheep, particularly in answer to the questions: Is the mutton good or profitable? and do they maintain the astonishing fecundity exhibited when first imported?

Giving Chloroform to Animals.

Insensibility to pain during severe surgical operations, is induced in the human subject by causing the patient to inhale ether, chloroform, or a mixture of equal parts of ether and chloroform, which is most commonly employed. The same agents produce the same effects when inhaled by domestic animals. This enables the surgeon or veterinarian to perform very difficult and even dangerous operations with comparative ease. The struggles of the animal being only mild, senseless, spasmodic twitches which are easily controlled. There is of course some risk of giving an overdose, but this need never occur if a little care be exercised. To apply the anæsthetic agent to a horse, pour upon a towel folded to about a foot square, enough of it to wet a surface in the centre as large as a tea saucer; then lay this upon the horse's nose and cause him to inhale the vapor which rises, mixed at first with much air; gradually, as he becomes accustomed to the smell, let him breathe it a little stronger, and even close the towel down upon his nostrils, but not so as entirely to exclude the air. His eyes will soon show that bewildered look indicating the approach of the profound stupor which will soon after affect him. Of course he should be firmly held or bound, so that under any circumstances he will be perfectly under control. Animals usually stand up through ordinary operations, but if they get too much of the chloroform and ether, they may fall. This must be provided against, and while the animal has still consciousness he must be made to lie down. For the performance of many operations consciousness need never leave the animal, and it is often best it should not. A condition of entire unconsciousness, particularly if accompanied by a very feeble pulse indicates that enough of the anæsthetic has been administered for present needs, and the cloth may be partially or entirely removed, to be applied again, however, should the *coma* or insensible condition not last long enough.

Besides the use of these agents in effecting insensibility in cases of surgical operations upon injured or diseased animals, by their means a fractious horse may be made managable while being shod; colts may be gelt, cows spayed, and many other similar operations performed which any ingenious farmer may do himself after a proper investigation.

Preparing Fuel, and Kindling Fires.

Friend B., of Cecil County, Md., adds further suggestions to our fire-building article in the December *Agriculturist*, designed more particularly for farmers who use wood only. We have barely room for the following epitome of his letter:

To save time in the morning is important; let the wood be cut, split, and well dried. Wood seasoned where exposed to the weather, is far inferior to that cut green and dried under shelter. It is most easily cut and split while green. [It is bad policy to burn green or damp wood; half or more of the heat is lost in drying out the water].—Where wood is abundant, a capacious fire chamber, in fire-place or stove, with large doors, promotes expedition in kindling, and facilitates heating and cooking. Farmers having a free home supply of wood, know that the chief expense is in cutting and splitting for small stoves. These require the rejection of knots, which are often the best portions to keep up a fire, or a good enduring bed of live coals to start with in the morning. The large stove or fire-place admits the large pieces and knots, and thus saves much work in cutting and splitting.—By pipes or even by openings in the ceilings, involving little or no expense, the surplus warm air from the stoves in lower rooms may be carried to the upper rooms and attic, and keep them all above freezing temperature, in the coldest weather. The question of economy between coal and wood, much discussed here, and elsewhere, depends mainly upon the relative cost. Coal at any price is preferable to green wood fresh from the grove or snow bank. A large *covered* pile of dry wood may change the question. Some use dearer coal simply on account of its keeping fire longer and even over night, who would change their reckoning if they learned to have dry wood ahead, with the liberal supply of large knots, and the spacious stove to use them in. A little intelligent reasoning on the subject would make many more farmers independent of the rioters of Mauch Chunk, [and of the grasping coal companies.]

It is better to decide a difference between enemies than friends, for one of our friends will probably become an enemy; on the other hand, one of our enemies becomes a friend.

It is a great misfortune to live under a government that will suffer people to do nothing; but it is a much greater to be under one which allows all to do as they please.

The Curculio is Repelled by Water.

To the Editor of the American Agriculturist.

At the "Fruit Growers' Meeting," as reported in the October number of your excellent periodical, the plum curculio was under discussion. I notice one gentlemen remarked he "heard much about the instinct of the curculio, and that the female will not deposit her eggs over water; but a visit to Dr. Underhill's place where the plum trees hang over a pond, proved that such was not the case, as the plums overhanging the water were equally affected with the others." I take the liberty to say the gentleman is mistaken, and will explain how he fell into the error.

The usual care bestowed on plum trees planted near my house, having failed to secure a crop of plums from the ravages of the curculio, it occurred to me some fourteen years ago, that the presence of water under the tree might deter the insect from placing its progeny where it would be inevitably destroyed. I planted about one hundred plum trees of the choicest kinds (most subject to injury from the curculio) on the margin of a two-acre pond, formed by removing the alluvial soil to enrich my farm. The pond is supplied with salt and fresh water, as well as fish, through sluice-way connections with the mouth of Croton River. The plum trees, of large size, were planted on the side of the bank, from one to two feet above the water at high tide, at an angle of from 35° to 40°, so that the tops might hang quite over it. They have borne fine fruit with as great, if not greater certainty than my apple orchards. I have had plums when I failed to secure a crop of apples. I have had crops of plums when, so far as I could learn, there was an entire failure through Westchester County. Finding my experiment succeeded so well around my pond, I concluded to plant plums and nectarines on the banks of the ditches in my reclaimed meadows. My sluice-ways connected with these ditches leave them '*bare of water*' at low tide, every day for three or four hours. The insect during this period perceives no danger from placing its nits in the fruit—and it has done so to the destruction of nearly all the crop for a number of years. The loss here has been nearly as great as when planted on the dry land.

The twelve years of successful culture of the plum around my pond, and the six years of failure to secure a crop of ripe plums and nectarines over my ditches that run bare at low tide, induced me to commence another pond that I might remove these to it, and secure them also from the ravages of the insect. To obtain the proper depth, it was necessary to discharge the spring water through sluice-ways into the other pond, and to keep the tide-water low in the latter we were obliged to shut out most of the water from the river, which left a few plum trees on a shoal part of the pond, free from water several hours every day. Many of the plums that hung on the trees over this bare spot were stung. These were the trees, the examination of the fruit of which, led the gentleman whose remarks I have above quoted, to believe my experiment was not a success—and yet it furnishes the strongest proof in its favor.

I have seen the segment cut in the plum in a very few instances where it hung *constantly over water*, but have failed after twelve years search to find the larva of the curculio in the plums in this position, though "marked by the Turk." The Bolmar or Washington plum is so subject to attack from the curculio, that for many years my trees planted on dry ground failed to secure a single specimen at maturity. I now ripen, on a single tree, hanging over the water of my pond, more than a bushel without a blemish. I have the pleasure to state further that I have been assured by several persons who have planted plum trees over water within the last five years, that the result has been with them entirely satisfactory. R. T. UNDERHILL, M. D.

Croton Point Vineyards, Nov. 17th, 1863.

The Cause of the Grape Rot.

The decay of grapes after they have attained their full size, has been of more frequent occurrence this past year than usual. Varieties, which like the Concord have generally been free from all disease, have been attacked in several localities. The matter has been investigated by F. G. T. Ludas, of Wisconsin, who has communicated his views to the Cincinnati Horticultural Society. Mr. L. finds that the decay of the berries is accompanied by a diseased condition of the roots; that vines which grew in ground covered with turf or by fallen leaves, were less attacked than others, and that when the ground was not well covered with snow during the previous Winter, the rot was more likely to appear. If it really be the case that the destruction of the berry is due to the injury of the roots by frost, the obvious remedy is to cover the ground with a protecting mulch of some non-conducting material. Coarse manure would protect the roots from frost, and also enrich the land and promote the vigor of the vines.

Training the Grape-Vine.

A correspondent in Schuyler Co., N. Y., says that he dissents from the method of pruning the vine described in the November *Agriculturist*, for the reason that "only ten spurs, with two buds each, in all twenty buds, are left. The shoots from these buds will produce three, or at *most*, four bunches of grapes each, making in all *at most* only eighty bunches for the whole vine—not half enough for a strong vine four or five years old. It is very easy to manage a vine for two or three years, but not so easy a vine eight or ten years old and a rampant grower. I have some of the latter, which truly bear bushels every year, and it is a task to keep them within bounds and at the same time not cut them to death. I should like to see Mr. Fuller's plan extended to suit a vine capable of bearing a thousand bunches."

Our correspondent's complaint is given in full, for the reason that it is a good illustration of a very common failure to appreciate the reason for training the vine at all. The fruit of the vine is always borne on new wood; that which has borne fruit, if allowed to remain, only cumbers the vine, and its fruitfulness is diminished. A vine allowed to run wild produces its fruit near the top, and is year by year more out of reach. In training and pruning, the aim is to always have a supply of new wood, and to keep the bearing portion of the vine within reach. Each vine is allowed to bear but a moderate crop, and all experience shows that this will be of larger and better-ripened fruit than if a greater quantity be permitted. After the arms are established, the vine is easily kept in control, no matter how rampant a grower it may be. There is no more "rampant" vine than the Hartford Prolific, yet we have seen this kept perfectly within bounds by the method of which the gentleman complains. His difficulty in managing his own vines shows that they were not started right, for had they been laid down with arms of definite length, he would not have his present trouble. We have seen, in other countries, vines nearly a century old, which had certainly been kept within bounds, as their arms were shorter than those we have described, though the trunk was as large as a man's thigh. If our correspondent wishes to train a vine to bear one thousand bunches, he can do so if he will take the time for it, but it is far preferable to have many vines bearing fewer bunches, as they may be had in full bearing in three or four years from the time of starting. The methods of pruning and training described in November are the simplest, and were given to show that there is no great secret in vine-dressing. There are other modes, essentially the same, described with an amount of detail which deters most people from attempting to do anything with their vines. An observance of the rules given in the article alluded to, will enable any one to start a vine in the right way, and keep it so with but little trouble.

Queries and Notes on Grape Culture.

The great interest which has been awakened in grape culture, manifests itself among other ways, in the numerous letters of inquiry sent to the *Agriculturist*. Some of the writers will find that their questions are already anticipated in previous numbers; others are replied to in the present article. It may be well to state, in passing, that the demand for vines during the past Autumn has been unprecedentedly large, and many of the nurseries are already exhausted of some varieties. It will be well for those who intend to plant next Spring, to send their orders to the nurserymen at once. Several have requested a list of the time of ripening of the leading varieties. It is not possible to give dates which will answer for all regions, but we name those of a single locality near the City of New-York, remarking that this is only for the past year, and that its only value is in giving the comparative time of the different sorts: (Creveling in Penn., Aug. 25;) Hartford Prolific, Aug. 25, to Sept. 1; Delaware, Sept. 1—10; Allen's Hybrid, Sept. 1—10; Concord, Sept. 10—15; Catawba, Sept. 15—20; Iona, Sept. 15—20; Diana, Sept. 15—20; Elsinburgh, Sept. 20; Union Village, Sept. 20—25; Anna, Oct. 1; Herbemont, Oct. 1—10. These dates are generally earlier than those at a short distance North, and some of them are later than have been published.—We are asked to name an early grape which will sell as well as the later ones. The earliest reliable grape we have is the Hartford Prolific, but there are others of great promise, which are yet to be tested in general cultivation. The Creveling and Israella have in certain localities shown that they have claims to an extended trial, but as yet they have not been sufficiently proved to induce us to recommend them for general planting for marketing.

The inquiry is made, if tender foreign grapes may be made more hardy by grafting upon native stocks. Doubtless those varieties which have hardy wood and tender roots may be benefited by this treatment, but the rigor of our Winters is such that the hardiest of the foreign grapes will succeed only in very sheltered localities. A subscriber in Kentucky, asks for a list of wine grapes for his State. Norton's Virginia, Cassidy, Louisiana, and Concord, are among the prominent sorts grown in Missouri, and would probably answer for Kentucky. The statistics he asks, are not in our possession.

Wine Grapes.

A grape for wine making must contain a large amount of sugar; the grape may not taste sweet, as the sugar is often concealed by the presence of acid, still it must be there or the grape will be worthless for wine. As the same variety will have a more or less rich juice in different localities, it will be seen that the opinion of a vine grower in Missouri as to the wine making qualities of any particular variety, will not hold with regard to the same grape grown in New-York. So far as is yet known, the Delaware stands at the head of the list of wine grapes for the northern and eastern States. The Concord is now receiving attention as a wine producer, and we notice that specimens of its wine were ranked higher than the Catawba by the Association at Cincinnati. Whether this verdict will be sustained in other localities remains to be seen. The Clinton and Diana have their advocates as wine grapes, and it is probable that a mixture of several varieties will afford a better wine than any one will singly.

Do Varieties of Fruit Degenerate?

M. Decaisne, Professor of Cultivation at the Garden of Plants, Paris, says that they do not. This is against the popular belief, and contrary to the opinions of some pomological writers. Prof. Decaisne, who is high authority, says: "The notion that fruit-trees degenerate because they are propagated by grafting, is an error which must be exposed. There is no single fact to prove it. Those which have been cited, depend upon totally different causes, first and foremost among which are climate, unsuitable soil, and very often bad cultivation or a neglect of pruning, so common nowadays. Our ancient pears, which a century or two ago were so justly esteemed, are now exactly the same as they ever were; they ripen at the same time, and keep good just as long....The pretended degeneracy of ancient races is really nothing more than one of the clever devices of the present day."

The Effect of Cross Fertilization.

That some varieties of plants do become fertilized by the pollen of other varieties and thus "mix," is a fact which has presented itself to the observation of every cultivator. With squashes and their relatives, as well as with many other plants, this tendency is often very annoying, as it prevents the preservation of desirable sorts. The question frequently occurs: in cross impregnation does the influence of the pollen applied this year manifest itself in any effect upon the *fruit* of this year, or does it remain latent in the *seed*, and only appear when fruit is obtained from that seed? There are many instances which go to show that an effect is produced the same year. The change in Indian corn is one of these, and it is stated on good authority that beans and squashes also show the effects of cross impregnation the first year. An observing fruit grower informs us that the Hovey's Seedling strawberry, a pistillate variety, cultivated in some localities, differs very much in quality according to the kind with which it is fertilized, it being less acid when impregnated by the Boston Pine, than by the Early Scarlet. Now as the so-called fruit of the strawberry is not the fruit in the botanical sense, but merely the enlarged end of the stem on which the true fruits, popularly considered seeds, are borne, it would seem that the pollen of one sort has the power, not only of affecting the fruit proper, but of extending its influence beyond that to the receptacle or enlarged end of the stem at the bottom of the flower. This is a subject upon which there is little positively known, and one which affords an excellent field of observation for the curious. It would be interesting to know how far this cross fertilizing affects the quality of our fruits, and it suggests the idea that the variation of the same fruit in different localities is not due to soil and climate alone. We shall be glad of any facts bearing upon this subject.

The Failure of Small Seeds.

It requires a great deal of care to succeed with very small seeds. If covered too deeply, they will not germinate; if planted very shallow there is danger that the surface of the soil will get dry and the little plant perish for want of moisture. In the March *Agriculturist* (page 75) the principal causes of failure were stated, and the subject is referred to again, as two instances have occurred in which the fault is laid at the door of the seedsman. A gentleman purchased a package of petunia seed of one of our neighbors, and afterward complained that portulaccas came up instead. He was assured that there could be no mistake, so he sent back the portion of the seed which had not been sown, which was submitted to our inspection. The seeds returned were to all appearances those of the petunia, and certainly not portulacca seeds, which are so remarkable in their exterior as to be at once detected. The figure shows the peculiar shape and markings of the portulacca seed, as it appears under a common magnifyer. Those having a microscope or magnifying glass, will find these seeds most beautiful objects to look at; they are shaped like little shells, have a fine metallic lustre and pretty markings. The second case was that of a person who sent us a mullein leaf as a specimen of the product of a paper of tobacco seed sent from this Office. As the seed was obtained from a source above suspicion of fraud, and this being the only complaint of it we have had from some thousands of similar packages, we are safe in concluding that the fault was not in the seed. The probabilities in both instances are, that the seed sown failed to germinate from some one of several causes, and that the plants alleged to have been produced by them were from seeds already in the soil.

Sand on Cranberry Meadows.

"Selahammah," of Fall River, Mass., writes: "My experience teaches me that putting sand on peat or muck soil at least, is worse than labor and cost thrown away. Some years since, I took some peat from a swamp for fuel, and then leveled off a sufficient quantity of the refuse for a cranberry patch. Having heard and read so much about the benefits of sand, and having a quantity of it from a well which I had been digging, I gave the beds a good coating. In addition to the swamp grass, the sand brought in all sorts of domestic weeds and grasses, and I have had a tedious job to keep them cleaned out. I have pretty effectually done it, but the fact is, that it has been more work than the vines are worth. In a swamp directly adjoining my lands, where cranberries are cultivated without sand, it has not been a quarter of the work to keep out the weeds and grasses."

Open Heads for Fruit Trees.

Most orchard trees have their heads altogether too crowded; the limbs are allowed to fill up the centre so that light and air are excluded, and the full development and maturity of the fruit prevented. A distinguished pomologist in giving directions for pruning an orchard, advised to leave room enough in the centre of the tree for a barrel into which to pick the apples; and he was not far from right. It requires but little trouble to get a tree into good shape, if it is attended to while young, when the knife will do the work, which, if neglected, will necessitate the use of the saw and chisel. Where large scars are to be made, it is always best to defer pruning until Summer; though cutting with the knife may be done after the severity of the Winter has passed. Trees should be started with a view to an open and well balanced head, but where this has been neglected, they should be made as nearly right as possible before they get large. Wherever a branch will crowd another if allowed to grow, or will unduly fill up the centre of the tree, it should be removed. A timely use of the knife in early Spring, and an occasional summer pinching of a shoot disposed to grow where a limb is not needed, will keep the top open. It is sometimes necessary in order to give the tree a proper balance, to induce a branch to prolong itself more than it naturally would; this can be done by removing the side shoots upon it.

Soils for Potting.

Those who are novices in the cultivation of plants in pots, are often troubled when they see the directions to use some particular soil or compost, given in the works on gardening. Various formulas for these composts are given, and some of their ingredients are mentioned by names which are little known in this country. These minute directions are frequently sufficient to deter those who think they are essential to success, from cultivating many plants. The fact is, that most plants will grow in any good garden soil, by which we mean a light loam enriched with vegetable matter and well-decayed manure. Sods from an old pasture stacked up and allowed to decay, will decompose into a compost which will suit the great majority of plants, and may be easily varied to suit particular ones by the addition of sand for those requiring a poorer soil, and by the use of some top soil from the woods to suit those requiring more vegetable mould. The sods and surface soil of a rich pasture, with about one-fourth of well-decayed manure like that taken from an old hot-bed, mixed together and left in a heap for some months, with an occasional forking over, will give a compost which will answer for all ordinary plants. Run it through a coarse screen to remove sticks and large lumps, and preserve under cover for use.

ARE GRAPES DETERIORATING? — Hovey's Magazine avers that the grapes exhibited during the last few years are inferior to those of the same varieties produced fifteen or twenty years since. May not the well-known tendency to look back to the "good old times," have something to do with such a judgment? Will any one substantiate or disprove the statement by facts?

A Neglected Native Fruit—The Papaw.

(*Asimina triloba.*)

Those familiar with the vegetation of the West, are acquainted with the Papaw, which grows from Michigan southward, being especially abundant in Tennessee, and other southwestern States. It forms a shrub or small tree, from 10 to 20 feet high, and is so fond of rich soils, that an abundant growth of Papaw is considered to indicate great fertility in the land. The shape of the leaves is shown in the engraving; when full grown they are from 6 to 9 inches long, and as they attain a glossy surface when old, the tree is quite ornamental in its foliage. The flowers appear in May, along with the leaves; the engraving gives them of the natural size and represents the leaves of their size at the time of flowering. There are two rows of brownish, veined petals, which increase in size after the flower opens. The fruit, which ripens in September, grows single, or in clusters of two or three. It is three to five inches long, oval in shape, and filled with a pulp containing several seeds, which resemble those of a watermelon in form, though much larger. To save room, the fruit is shown in the engraving of about half the natural size. When the fruit is fully ripened, the pulp is of the consistence of custard, and to the writer's taste, delicious. It perhaps reminds one somewhat of the banana, though many prefer it to that fruit. When we see to what perfection other fruits have been brought through cultivation, this native fruit would seem to be worthy the attention of experimenters. There is no doubt that there is, as in the case of other wild fruits, a great difference among those growing naturally, and seeds from the best of these might be taken as a starting point from which to attempt to improve the Papaw by culture and selection. The tree belongs to the family *Anonaceæ*, which includes the Custard-apple, and the Cherimoya, two of the most esteemed fruits of the tropics.

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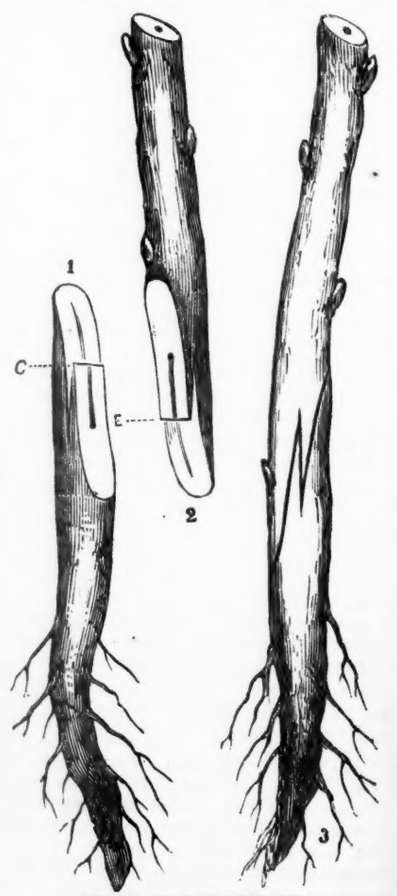
A Wonderful Plant.

Within a few years one of the most singular vegetable productions has been discovered in the Damara country in Africa. The plant, grows to be a century old, and its trunk attains a circumference of 14 feet, yet it never produces more than two leaves, and these, singularly enough, are the first or seed leaves of the plant. Imagine the two seed leaves of a squash to keep on growing and spreading over the soil until they reach a length of six feet each, and some idea can be formed of this vegetable wonder. These two leaves, which are "split into innumerable thongs that lie curling upon the surface of the soil," are all the foliage that the plant ever produces. The plant inhabits dry regions, where rain rarely or never falls, and has no need of a large surface of foliage. Flower-stems spring from the large trunk, and produce cones about the size of those of the spruce fir. The name of this strange plant is *Welwitschia mirabalis*, and it belongs to the family of *Gnetaceæ*, of which we have no representative found native in our climate; it is allied to the pine family, however.

Root-Grafting.

In answer to several requests, we give a few hints upon this method of propagating, remarking that what seems to be a difficult operation when described, is very simple in its execution. Root-grafting means—not grafting into the roots, but taking up trees by the roots, and grafting them in-doors, during cold weather, which is of especial value in many cases. The essential points to be observed are noted below, and a little practice will enable any man or boy who can whittle, to become expert. It is well to make a few preliminary trials upon worthless twigs; this will soon give one the proper knack at cutting, and all the rest is very easy. The stocks used for root-grafting are one-year-old seedlings; these, if they have made a good growth, will have a diameter of one-fourth to three-eighths of an inch. The stocks are taken up in Autumn and buried under a shed, or in a cool cellar, so that they will neither dry up nor be frozen. A sufficient quantity of cions are cut, carefully marked, and preserved in the same manner. The stocks and cions being on hand, the only additional materials required are a sharp knife and some waxed cloth. The best material for cloth is worn calico or muslin, no matter how thin and tender: this is torn into strips about three inches wide, and made up into rolls or balls as large as one's fist, or larger. In making up the rolls, it is necessary to keep the strips flat, without any folds. These rolls are to be put into melted grafting-wax and soaked until they are thoroughly penetrated by it; they are then laid out on a piece of board to drain and cool, when they are ready for use. Grafting-wax is made by melting together over a slow fire, 2 lbs. Resin, 1¼ lbs. Beeswax, and ¾ lbs. Tallow, or in this proportion. The stocks are prepared by washing them and cutting off the long tap-root. The graft is inserted at the "collar," or that portion of the stem where it joins the root. Make a cut sloping upward (like the mouthpiece of a whistle) from an inch to an inch and a half long; then in the centre of the slope, cut a tongue as shown at *C*, Fig. 1. A cion about the same size as the stock, and 3 or 4 inches long, is cut in the same manner, except that the slope is downward: this, *E*, Fig. 2, has also a tongue cut in it. The two are now fitted together as in Fig. 3, pressing them together so that the inner bark of the stock and cion will exactly join, at least on one side. The union being satisfactorily made, the two are to be bound together. A portion of the waxed cloth is unrolled from the ball, and a piece large enough to cover the junction and go two or three times around the stem, is torn off and applied, by wrapping it around closely so as to exclude air and moisture. The grafted stocks



METHOD OF ROOT-GRAFTING.

are placed in boxes, with sand or sandy soil among their roots, and kept in a cool cellar or other place, neither too dry nor too cold. Of course each separate variety should be properly labelled, and to avoid the chance of mistakes, it is well to work upon only one sort

at a time. In Spring, as soon as the soil is in good working condition, the grafted plants are set out in nursery rows. The usual method of planting is to open a trench and set them at about 18 inches apart, and cover so that the junction will be entirely below the surface. By making the cuts clean, with a sharp knife, joining so that the inner bark of stock and cion will be in contact, and binding carefully with waxed cloth, there is little danger of many failures. Root-grafting is largely practised in nurseries, though there are some who consider that trees produced in this way are never as vigorous and shapely as those obtained by budding, or by grafting stocks which have been long enough planted to become well established. One great advantage of root-grafting is, that it can be done in-doors, and at a season when outside work cannot be prosecuted. Trees started in this way, will in favorable situations make as good a growth as from buds. The term root-grafting is sometimes applied to grafting on bits of roots, a method not to be recommended.

THE HOUSEHOLD.

Get a Home and Keep it.

A leading object with every young man should be to secure for himself a permanent home. And for its greater stability, it should consist partly in land, and up to a certain limit, the more of it the better, if paid for. The house should be as comfortable and attractive as one has the means of making it. It should be one that the heart can grow to, and will cling around more and more firmly with every passing year. Its owner should desire and purpose to keep possession of it as long as he lives, and his children should grow up feeling that there is one place fixed and stable for them, amid all changes.

Americans are altogether too roving in their habits. We build houses cheaply, and pull them down without regret. Or we sell out and move away a half-dozen times in a life time, in the vain hope of bettering our condition. How much better to choose a homestead early in life, and then lay plans with reference to abiding there. Even though our gains be less than are promised elsewhere, a certainty should seldom be given up for an uncertainty. "A bird in the hand is worth two in the bush."

Only those who have experienced it, know how firmly a family become attached to their long-loved homestead. No children love home so well as those who have known only one. As the young become of marriageable age, they should go out, one by one, from the old homestead, feeling it to be the model after which their own should be established, and knowing that this will remain unchanged as long as the parents live, a place to which they can return, and where they will be ever welcome. A pleasing writer confirms our doctrine thus: "There is a great gain in being settled down. It is two-fold. Each year accumulates about the farmer the material by which labor is lessened. The rough channels of labor become worn and smooth. A change involves a great loss, and rarely is there a corresponding gain. Time is lost, labor expended, money paid out, the wear and tear of removal is no small item; and above all, the breaking up of old associations is often disastrous in the extreme. Parents and children become unsettled in their habits, if not in their morals.....Let the man who has a homestead keep it; let him that has none, get one and labor to render it a treasured remembrance to the absent, and a constant joy to those who abide in it." To all which every intelligent, thoughtful person must give a hearty approval.

IMPROVEMENT ON THE LUNG PROTECTOR.—A correspondent in Charlton, N. Y., highly commends the use of the lung-protector deseribed in the *American Agriculturist*, Vol. XXII, page 309, (October, '63.) He prefers the article to be of oiled silk on the outside, the inside of dress silk, with a thin padding of cotton between. A serious objection to this is, that it prevents the escape of the exhalations from the skin, while the chamois leather or sheep skin allows the prespiration to pass freely through and yet acts as a non-conductor of heat. One correspondent however suggests what may be an improvement: viz., that instead of four strings, only two be used—each one fastened to a top corner and to the opposite bottom corner, crossing at the back like suspenders. Arranged in this manner knots are avoided, and the protector can be slipped on and off over the head, without tying or untying.

Improved Cap for Coal-Oil Lamps.

Every one who has used a coal-oil or kerosene lamp (and few families in this country have not,) knows the inconvenience of removing the chimney and burner, in order to replenish the oil. Without much care there is danger of spilling the oil while holding the burner with one hand, of soiling the hands and the table if the wick be lifted from the lamp, and also of pouring in too much and causing an overflow of the not very sweet-scented compound. The device represented below is intended to remedy these difficulties. The attachment, *a*, consists of two brass collars joined by a hinge. The upper collar has a convex surface fitting snugly to a concavity in the lower one, and the joint is made still more close by a rim which closes over the bottom collar. A small spring projection holds the two together when closed. The apparatus is easily attached to any lamp by the screws, the upper one to receive the burner, the lower one to enter the collar on the lamp, as plainly illustrated in the larger figure of the above engraving. Nearly or quite all kerosene lamps in market have the screw threads of uniform size, so that the above attachment, which is made accordingly, can be placed on lamps now in use. The filling, as will be readily seen in the engraving, is done by simply opening the attachment and pouring in the oil, without removing the chimney. It is a neat and cheap contrivance, and well adapted for the purpose intended. Dealers or others interested will find further information concerning this invention in the appropriate place in our advertising columns.

ATTACHMENT FOR FILLING A LAMP.

A Good Dress Elevator.

We have no time to study the vagaries of fashion, and scarcely know when a new style of coat, hat, dress, or bonnet "comes out," unless it be something so *outre*, so unseemly, as to command attention by its oddity or incongruity. We pity those who have no higher aims or ambition than to be up with the latest style of wearing a watch fob or a bonnet string. Being somewhat of a railroad traveller, daily, we have been compelled to note the inconvenient crinoline expansion, which has more than kept pace with the "currency," and we see with pleasure that the steel clad armor is contracting to something like convenient and tasteful proportions. This improvement is in danger of being counterbalanced by the lengthening of dress skirts. This we are also obliged to take notice of, when hurrying along the street, and compelled by the trailing folds to keep at proper distance from a bevy of fashionable ladies half a dozen yards ahead. We therefore take the more pleasure in speaking of a new and convenient little apparatus brought out by Madame Demorest, which she calls an "Improved Dress Elevator." In brief, it is a belt worn *under* the dress, with cords and hooks so arranged that by drawing two cords, a lady can elevate or lower the folds of the dress as she walks along. The neat and tasteful appearance of the dress, when so raised, is shown in the above engraving. Each breadth of the dress is raised at the same time. It is easily applied, the same one answering for any number of dresses, and being retailed at the low price of 50 cents, it is worthy of introduction.—If generally adopted, it will require an increase in City Inspector Boole's street sweeping force, as he will not have the ladies' aid thereafter.

Notes on Dress, for Winter of 1863-4.

Prepared specially for the American Agriculturist,
BY MME. DEMOREST.

The styles for this season are more striking and picturesque, than for several years past, and in many respects commendably sensible. In place of wearing paper-soled shoes and thin cotton stockings, the most fashionable ladies now walk Broadway with boots heeled and toed like those of a soldier, and their limbs protected by Balmoral hose. The Balmoral skirts are yet in vogue, and these, with the use of the new "elevator" for the dress, provide a promenade costume for all weathers, which has already done away much of the pernicious repugnance to out-door exercise. To shorten the skirt for in-door wear would be a violation of artistic taste. We notice with pleasure that trim-

mings for the skirt are less profuse, and for many of the richest toilettes the skirts are entirely plain.

Scotch plaids in all textures, are a distinctive feature. The preference is given to blue and green combinations. The bright tartans are better adapted for misses' and childrens' wardrobes.

Bodices are made high, frequently trimmed in jacket form, but always terminating in "postillion," "sash," or "rounded basque" ends. The "*postillion*" is a short jacket-back, eight to ten inches deep, and narrow and straight at the sides: that is, about half the width of the side shape is made to form in with the centre of the back, and laid in flat or plain plaits, as preferred. The "*sash*" waist proper, has two graduated ends cut on with the body, usually eighteen inches deep; they are frequently cut of the same length in front.

"*Basque*" ends are usually wedge or leaf shape, terminating sometimes quite long in the center, and the sides graduated from that; others barely give an opportunity for trimming at the bottom of the waist. The spring, or skirt part in the above named styles, does not extend to the side seams.

Basques are being revived in improved styles. A becoming form for a plain basque is, to cut the skirt or spring six or eight inches in front, and ten inches in the back, and shape it in a rounded slope to the seam under the arm; or in other words, make no spring at the sides, but let it be carried straight down over the hips in the form mentioned, and finished at the edge with chenille fringe six to ten inches deep. The sleeve to correspond, should be what is termed wide coat shape, with a narrower fringe set on above the edge in a regular form, to indicate a cuff. The joining of the sleeve to the body is concealed by a row of fringe which is a becoming and favorite style.

Sleeves are made close at the hand, for traveling, and where simplicity and comfort are considered. Aside from these, they are open at the wrist and somewhat wider than they were, but not full. Where for variety they are full at the top, they are invariably sloped narrow at the hand, and left open at the back to display the undersleeve; but all, though variously cut, assimilate to the coat sleeve.

The most popular cloaks are made of beaver cloth and plush, which if not superbly elegant, are, yet better, warm and comfortable.

Bonnets have somewhat changed their shape, and very decidedly their style of trimming. The ornaments are now all massed on the top of the crown, and the front, instead of flaring up, is made somewhat lower and plain on the outside; the interior has the decoration placed a little on one side, the vacant space being filled up with half a dozen quillings of illusion. Jockey hats are more than ever in favor with young people. The Spanish style, in felt and beaver, trimmed with velvet and plumes, but without any ribbon, and fastened with elastic instead of strings, is the one principally worn.

Why So Much Poor Bread?

MR. EDITOR:—Can any reader of the *American Agriculturist* explain why it is that so large a number of good housewives have so much "bad luck" in making bread? I have traveled a good deal, and enjoyed eating at hundreds of tables. The result of my experience and observation is, that not half of the families of the country, rich and poor included, even know what *good* bread is: they have never eaten enough to know the genuine, light, well-baked article when they see it. Of the other families, half at least have quite as much poor bread as good—about three bakings out of five being defective from some cause—while only about one family in twenty have good bread always. Now why is it that those who are in all other respects excellent housekeepers, and never fail to have other work well done, yet fail here? Need bread-making be such an *uncertain* process? Is it necessary to have it too heavy to-day, too much raised to-morrow, over-baked on the next day, and under-baked on the following day? If one out of twenty housekeepers always manages to have a good, light, sweet, properly-baked article, could not the other nineteen do the same if they brought the same care and skill to bear? Bakers never think of failure: their bread is always expected to be light and good. If the learning of the trade makes the difference, would it not be worth while for every housekeeper to learn the trade? The process is not so varied, and does not require such a degree of acquired mechanical skill, as to make a long apprenticeship requisite. I repeat the question at the head of the letter: "Why so much poor bread?" and add another: Can nothing be done to remedy the difficulty? Let your fair correspondents put their heads and pens together. When they succeed, the writer of this will be less inclined to remain a "*crusty*" BACHELOR.

The Bread Question—Butter Costs More than Flour—Cheaper to Buy Bread than to Make It.

MR. EDITOR: As bread is literally, as well as figuratively, the "Staff of Life," I for one desire to see this subject occupy a larger space in the *American Agriculturist* for 1864. To start the question, I supply a little from my experience: My family consists of five persons. We keep a record of every expenditure, and here is the account of three items for the year ending Sept. 1, 1862:

Meats, (average $1.84 per week,)	$95.68
Flour, 5 bbls. and 40 lbs	46 25
Butter, (5½ lbs. per week, average 22½c.)	65.81—$207.74
Total for Flour and Butter	$112.06

My "better half" was in poor health, and her care much required by an infant, so that the baking was mainly done by the kitchen girl. Though otherwise a good girl, and well recommended from her last place as "a good bread-maker, etc.," the bread was not just right more than once in five times, if so often; hence butter in quantity, gravies, toasts, bread-puddings, etc., were continually required to use up the poor bread. On looking over the matter, we concluded to try *buying* bread. Here are the figures for the year ending Sept. 1, 1863:

Meats, (average $1.63 per week,)	$84.76
Bread, (451 loaves at 10c., 324 loaves at 5c.)	61.30
Butter, (4¾ lbs. per week, at 23c. average,)	56.81—$202.87
Total for Bread and Butter	$118.11

During the second year we enjoyed better health, and certainly enjoyed our meals more, as we always sat down to the table with good bread before us. Less meat was desired, and less butter required to give the bread "a relish." The saving in butter was only 14 ounces a week, but this made an aggregate saving in the year of $9, after reckoning the increased cost. I have allowed nothing for cost of fuel in baking, of time, milk, salt, etc. As in the home baking system, it costs more for butter than for flour, and from considerations of health and comfort, I believe it cheaper to buy baker's bread, when it is conveniently at hand and at a reasonable price, than it is to bake at home—at least where good home-made bread cannot be uniformly produced. NOT A BAKER.

Soda versus Saleratus.

The other day we saw at a store a lady looking for "*Saleratus.*" She said "she never used cooking soda; it was not half so good as Saleratus." She obtained a neatly-done-up package, labeled, advertised, and recommended highly, as "pure Saleratus." We happen to know, by chemical analysis, that the so-called pure Saleratus was simply cooking soda (super-carbonate of soda) adulterated with salt to reduce the cost. Genuine Saleratus is a bi-carbonate of *potash*, which is obtained from wood ashes by leaching out the carbonate of pôtash, evaporating the water, purifying by burning, and *bi*-carbonating it with carbonic acid. Cooking soda is bi-carbonate of soda prepared from common salt by a chemical process, in which commercial chloro-hydric acid is produced at the same time, so that the original cost of the soda is but 3 or 4 cents per lb. As salt is abundant, and ashes are scarce, the soda will always be much cheaper than Saleratus.—The practical point is, that soda answers every purpose of saleratus. As an alkali to neutralize sourness in cakes, bread, etc., it is equally effective. As a source of carbonic acid gas to lighten up the cakes or bread, it is also just as good as saleratus. The resulting salts, left in the food by soda, are at least as simple and uninjurious as those of saleratus. It is a mere notion, or want of skill in use, that would lead any one to prefer the dearer and scarcer pure saleratus, to cooking soda.

The chemical reader will understand, also, why soda goes further than the potash saleratus. The equivalent of the potash saleratus ($KO,2CO_2$) is 39+8+44=91; that of cooking soda ($NaO,2CO_2$) is 21+8+44=73,—so there are as many neutralizing soda elements in 73 ounces of pure cooking soda, as in 91 ounces of potash saleratus. The same may be said of the gaseous carbonic acid. Therefore, while soda costs less, yet 5⅛ lbs. of it go as far in cooking, as 6½ lbs. of the saleratus. (In the ordinary method of manufacturing, the bi-carbonating is not very perfect, but considerable portions of simple carbonate remain. The commercial articles are therefore properly termed super-carbonate of soda, and super-carbonate of potash.)

"Ham and Eggs"—Get the Eggs First.

If there is any better breakfast than "ham and eggs" to brace a man up for heavy out-door work in these cold days, we don't know what it is,—*always provided*, that the ham was good originally, that it has not been salted, smoked, or cooked to death, and that the eggs are not done to a crisp, but are simply hardened in the fat so as not to run. Ham, if barely cooked enough not to taste raw, and then well masticated, or cut very fine if the teeth are too tender, is both digestible and nourishing. Lean meat furnishes lean meat—that is, the muscles of the body with which we *work*. The fatty portion supplies carbon to keep up the internal fire of the system most needed when it is cold without. The nitrogenous albumen and the oil of the eggs, answer the same purposes. So much for the housekeeper and cook. Now to get the eggs—and the housewife must look after this, too, if the "men folks" don't, or won't.

Hens will lay about as well in Winter as in Summer, if "circumstances" permit. To produce eggs well, fowls must be *comfortable*, and must have animal food. When the ground is open, and worms and insects abound, they get their own material. They must have gravel to keep their grist-mills in good working order, and lime to make the shells. Sometimes a hen drops a shell-less egg, but she is ashamed of the skinny, unprotected thing, and seldom does it twice. Sometimes she will drop an egg where its life is sure to be frozen out, but her instinct teaches her better, and she stops doing so, if possible. Here is the whole secret of having plenty of eggs all Winter,—we have tried it long, and so have others, with good success always; and as eggs will sell well this year, owing to the high price of meats, we advise attention to the matter:

1. Give the fowls *some* warm, thoroughly sheltered place of retreat, and keep it clean. Take out all the droppings at least once a week: they are excellent guano, worth half the cost of the food. (We have a nice, plastered, warm room in the sunny south-east corner of the second story of the barn, provided with roosts and laying-boxes having the entrances turned so as to be out of sight of the rest of the poultry. Hens are modest animals, always seeking hidden places for nests. A narrow enclosed stairs leading up from the barn-yard, is freely used.)

2. Let them have unfrozen water always accessible. Semi-fluid eggs cannot be made out of dry grain.

3. Hens are not gluttons. Let them have grain in abundance, and they will eat only what they need.

4. Provide a wide box of gravel, earth, sand, ashes, and old plaster or finely-broken oyster shells, for them to roll in, and to pick out such materials as they require.

5. Give them two or three times a week, if not daily, a moderate supply of *fresh* meat, (never any salt.) Nothing comes amiss—bits of cartilage, in-

testines, any waste scraps. They will pick bones very clean. We depend upon a cake of scraps from the bone or glue boiler's. The hard scrap-cakes, of 50 to 100 lbs. each, which are sold at ¾ to 1¼ cents a pound, are just the thing. This material does not decay, and the hens amuse and feed themselves by picking off little bits from time to time. The waste vegetables, clippings from cabbages, potato skins, cold potatoes left over (if not cooked in salt water,) are relished by the poultry, and turned to account.

The above simple directions, if rightly followed, seldom if ever fail to secure a full and profitable supply of eggs all Winter. In the absence of any thing better, a straw enclosed shelter will answer for poultry. See description of straw work, page 9.

To Prepare and Keep Sausage Meat.

John H., of Cold Spring, L. I., sends the following directions to the *American Agriculturist:* "To season 10 pounds of sausage meat, use 4 oz. salt, scant 1 oz. pepper, with sage and thyme to suit the taste: it is improved by having about one-sixth of the meat lean beef. When the meat is prepared, take either hogs' or beeves' bladders, and blow them while fresh, but not too thin. Let them dry a few hours, cut off the neck, wash and soak about twelve hours in lukewarm salt and water, then scrape lightly with a dull knife, turn them on the wrong side, and fill with the meat. Leave room enough to draw the edges of the bladder together, take a large meat-skewer or sharpened wood-pin made of hickory or locust, strong enough to bear the weight of the filled bladder, and pin the edges back and forth across the top. Tie a stout cord below the stick, draw it together tightly, and tie the ends to form a loop; then hang in the garret. The bladders being air-tight, the meat will keep until warm weather, as sweet and fresh as when first put up. Should the bladders tear a little around the pins, fill the places with sweet lard, after they are hung up. Calves' and sheep's bladders are not strong enough to bear filling.

A Contributor in a "Stew."

MR. EDITOR.—I don't live: I board. I have been looking over the household department of the *Agriculturist* in hopes that I might find something that I could put in my landlady's way to enlighten her on the subject of stews. Pieces of indifferent meat, such as when fried are uneatable, can be made into a most acceptable stew. When I kept house, a neck piece of mutton furnished us with a favorite meal—cheap, and good enough for any body. The meat in a stew should be thoroughly done until it is tender. If there is much fat, cook the meat the day beforehand with water only, let it cool, and remove the fat from the surface. The vegetables may be added and cooked just before the meal at which the stew is wanted. By managing in this way, a thoroughly cooked stew can be had for breakfast. For a breakfast dish I prefer meat and potatoes only—with a seasoning of salt and pepper. For dinner the vegetables may be varied; mutton with potatoes and onions, makes the celebrated Irish stew; with carrots, a delicious dish; with tomatoes, it is superb, and with green peas and tender bits of asparagus, it is fit to set before a king. Beef instead of mutton, will give another series of dishes. Do stir up your readers on the subject of stews, and oblige STEW-ART.

Dry-Salting Beef.—J. C. Fenn, Litchfield Co., Ct., in a note to the *American Agriculturist* says: Beef will keep well, if packed in a mixture of 4 qts. salt, 4 lbs. sugar, and ¼ lb. saltpetre, to every 100 lbs. meat. He advises to use no water to make brine, as, he says, if properly packed the meat will furnish fluid enough for the purpose. Without having tried this, it would seem that such an abstraction of the juices of the beef would be likely to make it hard and tasteless.

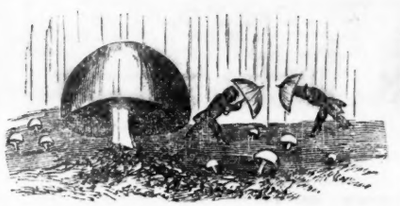
Cheap Crust for Pumpkin Pies.—Contributed to the *American Agriculturist* by Mrs. David Brush, Queens Co., N. Y.: Grease the platters *thoroughly*, and cover with Indian meal. Fill carefully with the prepared pumpkin, so that the stream in pouring will not wash the meal from the middle of the platter. The pie should be baked brown on the bottom. This will be found very convenient for a washing day, and economical in these times when butter and lard are so high-priced.

Farmers' Pudding.—Contributed to the *American Agriculturist* by "Aunt Phebe," Perry, Ill. Heat one quart of milk to boiling, then stir in slowly one teacupful of Indian meal. Mix with this about six good apples pared and sliced, and add two tablespoonfuls of sugar, one of butter, and a little allspice and nutmeg. Pour the whole into a deep dish and bake until done or about 40 minutes.

BOYS & GIRLS' COLUMNS.

"A Happy New Year"

TO ALL OUR YOUNG FRIENDS! That the year upon which we now enter, may, indeed, be a happy one to *each* of the hundreds of thousands of little ones, and the Children and Youth who read these pages, is our earnest wish. We shall do our best to add something to your pleasure, and hope to not only amuse you by pleasant stories, pictures, games, etc., but also to weave in many hints, and suggestions, that will improve your minds and hearts. But remember that the *seat* of happiness lies deep in your own heart. If this be wrong, pleasant things on the outside will only cover up a festering sore that will ever give pain and discomfort. Start right, then at the very beginning of the year—on its first morning, and get the *heart* right. What of strength you lack, the Omnipotent, the all powerful One will supply, if you earnestly *ask* for His aid. But He only helps where *our* power ends. We must first put forth all our own efforts. His command was, not to pray merely, but to "*watch* and pray." So we must watch, strive, make all the effort we can. We commend to the kind care of the Great Shepherd, the tender lambs of our flock. May He temper the storms and blasts to their strength, and kindly bear them in His bosom.



The Mushrooms and the Umbrella.

In the November *Agriculturist*, page 344, the anecdote of Alexander Dumas and the Mushrooms was related, wherein the author tried to ask for mushrooms by drawing a picture of them, and the Swiss servant brought him an umbrella. We suggested to our young readers to try their skill at sketching a mushroom and umbrella. One of them sent so neat a drawing, that we have had it engraved. The author did not give his name; he need not be ashamed to own the picture—there would be little danger of confounding the two articles in such a sketch.

The Deceptive Knot.

Some surprise may be excited among the lookers on, by a little sleight of hand performance, illustrated above. Loosely tie an ordinary single knot in a pocket handkerchief, give the end out of your right hand to some person, and tell him to pull hard when you count three. Just as he pulls, slip your left thumb under the handkerchief, in the way shown in the engraving, and at the same instant let go the end that hangs over the left hand, and grasp the handkerchief with the thumb and finger. It will be drawn out quite straight through the hand without any knot.

An Amusing Toy.

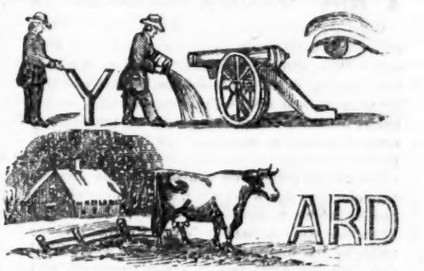
Copy the images in the above engraving, each one upon a circular piece of paper the size of a copper cent. Then paste them upon opposite sides of a round bit of thick card-board or paste-board. Arrange them so that when the head of the woman is upward, that of the child will be downward, and let them be both in line. After the paste is dry, fasten a string to each side of the card, as is shown in the engraving. Now if you make the card revolve by twirling the strings between the fingers and thumbs, the lady will appear to be holding the child in her arms. The effect will be better if pictures of a larger size than these are made. Those skilled in drawing can contrive other similar toys, as, for instance, a boy on one side and a horse on the other; or a dog and a rabbit; or whatever else may suit the fancy. This little instrument well illustrates a fact in natural philosophy. How many of the *Agriculturist* school girls and boys can state what that fact is?

About Gold Leaf.

A solid or cubic inch of pure gold weighs 4,862.30904 grains. At $20 and 260-387, per ounce, (Troy weight,) which is the exact value of *pure* gold, the cubic inch would be worth——how much? Gold when hammered out into leaf, such as is used for gilding the backs of books, etc., may be beaten so thin that 300,000 leaves will only make one inch in thickness. One cubic inch of gold may therefore be made into leaf to cover 300,000 square inches, or 2083 square feet, or over 7⅛ square rods. This would be enough to gild the entire floor, ceiling, and walls of a room 20 feet square and 16 feet high.

New Puzzles to be Answered.

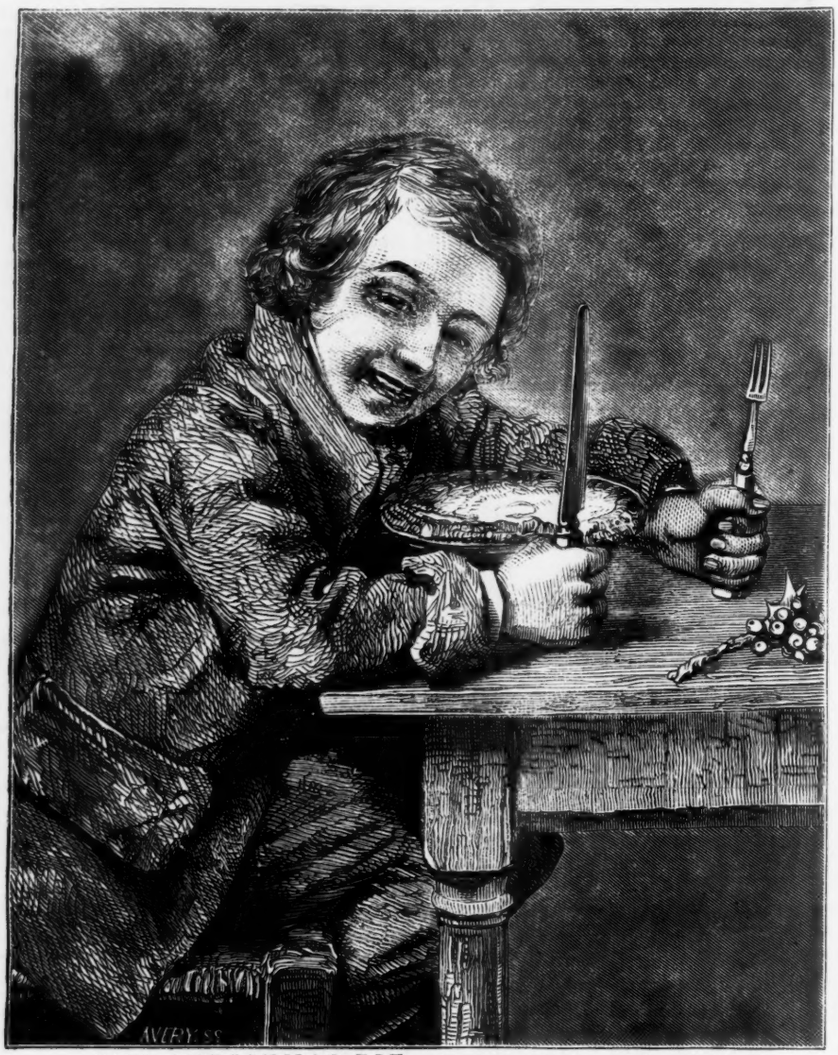
Nos. 62, 63, 64. *Mathematical Problems.*—An item on page 10 gives the assessed value of property in New-York State as $1,454,454,810. *Question* 62: If this money were all in a solid gold ball, what would be its diameter?—*Question* 63: If all in silver, what would be the diameter of the ball.—*Question* 64: If all in one dollar bills, 3 by 7 inches, how many acres would they cover? NOTE: 271 and 41-129th gold dollars or 16 and 32-33ds silver dollars weigh a pound Avoirdupois. Silver is 10½ times and gold 19⅓ times heavier than water. A gallon, or 8 pounds (avoirdupois) of water, contains 231 cubic inches. The above three questions will give a good exercise to our young readers who are studying arithmetic this Winter.



No. 65. *Illustrated Rebus.*—Worth reading by soldiers.

Answers to Problems and Puzzles.

The following are solutions of the puzzles, etc., in December No., p. 375.—No. 59.—*Puzzling Sentence.* In 1792 France was divided, monarchy obliterated, laws overturned, religion set aside, and rebellion sprang up in every corner. No. 60.—The *Wheel Puzzle.* We give the answer in the words of S. N. Dexter North, of Oneida Co., N. Y. "The hub, although it rolls an equal distance with the felloe, does not revolve through an equal *space.* —No. 61. *Illustrated Rebus.* Two in 8 team B on nest man ly re ve rent and love in g; or, "To win esteem, be honest, manly, reverent and loving." The following have sent in correct answers up to Dec. 12th. The numbers indicate the problems, etc., answered by each. S. N. Dexter North, 59, 60, 61; Isabella Curtis, 57, 58; "C. A. R.," 55; Wm. G. Kieffer, 55, 57, 58; Phineas B. Davis, 58; Walter A. Carpenter, 57; F. M. Smith, 55, 57; J. Coyte, Jr., 57; Lucy and Lewis, 55, 56, 57, 58; "H. H." 55. Wirt C. Williams, 61; George H. Elliot, 59, 60; Thomas H. Edwards, 61; Walter Briggs, 61; Wilson Thomas, 61.



THE CHRISTMAS PIE.—*Engraved for the American Agriculturist.*

A Rich Treat—A Generous Boy.

What a splendid feast! A whole Christmas pie, filled with plums such as Johnny Horner picked out when he said "What a brave boy am I." "Its *all* for me," the boy is saying, not in words perhaps, but his satisfied smile, his arms thrown around the dish, and his body leaning fondly toward it, all speak more plainly than words. The sprig of holly lying near, upon the table, shows that it is holiday times, and some kind friend has made the boy a Christmas present. "I'd like to be in his place," more than one little fellow is saying, as he thinks of the good pies his mother makes. Wait a little, while we tell you of another boy that lived in Boston; perhaps you would rather be like him than to have even a whole Christmas pie. He was employed by a rich merchant who had his dinner brought to the store every day, and frequently having more than he needed, he gave the boy a cake or a piece of pie, or some other dainty. One day the gentleman noticed that the boy slyly put away the cake he had received, into his basket, instead of eating it. When asked why he did so, the boy blushed and did not like to tell, but finally replied, "We are very poor sir, and my mother and sister seldom have any thing nice to eat, and I would rather give it to them than have it myself, if you have no objections." "And do you often do this?" asked the gentleman. "I always do," was the reply. His employer was so greatly pleased with this noble conduct, that he at once increased the boy's wages, and as he continued faithful, advanced him step by step, until he became a member of the firm, and a wealthy citizen. Was not that better than having the cake all to himself? Even if the gentleman had not discovered it, the boy's noble unselfishness would have given him higher pleasure than all the pies and cakes in a baker's shop.

The boy in the picture looks like a pleasant fellow, who would willingly lend his sleigh or his skates, share his marbles, or ordinary pleasures with a play-fellow; but the pie is something extraordinary—he couldn't think of giving away any of that. A writer says: "It is easy to give what you don't *feel*, but true unselfishness is to give what will *make* you feel:" that is, to deny yourself for the sake of another. The Boston boy did this; how many *Agriculturist* boys and girls will practise the same virtue this New Year, and thus make it a doubly happy one?

The Beggar Boy and the Flowers.

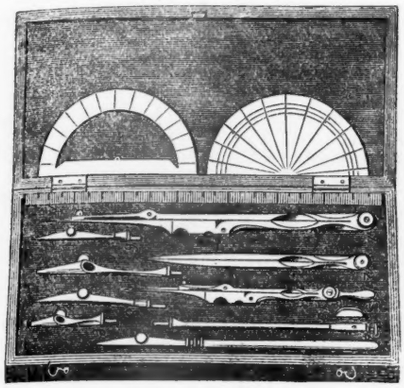
The following story, the origin of which we cannot trace, beautifully illustrates the power of kindness. "Go away from there, you old beggar boy! You've no right to be looking at our flowers," shouted a little fellow from the garden where he was standing. The poor boy, who was pale, dirty, and ragged, was leaning against the fence, admiring the splendid show of roses and tulips within. His face reddened with anger at the rude language, and he was about to answer defiantly, when a little girl sprang out from an arbor near, and looking at both, said to her brother: "How could you speak so, Herbert! I'm sure his looking at the flowers don't hurt us." And then, to soothe the wounded feelings of the stranger, she added: "Little boy, I'll pick you some flowers if you'll wait a moment," and she immediately gathered a pretty bouquet and handed it through the fence. His face brightened with surprise and pleasure, and he earnestly thanked her. Twelve years after this occurrence, the girl had grown to a woman. One bright afternoon she was walking with her husband in the garden, when she observed a young man in workman's dress, leaning over the fence, and looking attentively at her and at the flowers. Turning to her husband she said, "It does me good to see people admiring the garden; I'll give that young man some of the flowers;" and approaching him she said: "Are you fond of flowers, sir? it will give me great pleasure to gather you some." The young workman looked a moment into her fair face, and then said in a voice tremulous with feeling: "Twelve years ago I stood here, a ragged little beggar boy, and you showed me the same kindness. The bright flowers and your pleasant words made a new boy of me; ay, and they made a man of me, too. Your face, Madam, has been a light to me in many dark hours of life, and now, thank God, though that boy is still a humble, hard-working man, he is an honest and a grateful one." Tears stood in the eyes of the lady as, turning to her husband, she said, "God put it into my young heart to do that little kindness, and see how great a reward it has brought."

Pleasant Work for the Young—Obtaining New Fruits.

Not many years since a lady in the City of Hudson, N. Y., procured some soil from the street in front of her dwelling, to enrich a flower plot. A little plant sprung up from it, which proved to be a grape vine, grown from a seed accidentally dropped there, perhaps by some child, eating grapes near the spot. The vine was permitted to grow and bear fruit, which proved to be different from any variety known, and of very excellent flavor. A nurseryman in the vicinity tasted the grapes, and liked them so well that he offered to take the vine and raise others from it to sell, and to divide the profits with the lady. This was done, and in a few years she realized enough from her share to purchase a handsome farm. The name of the grape is the Rebecca; many of you may be well acquainted with it. Now what is to prevent every boy and girl who reads the *Agriculturist* from planting grape seeds, raising the vines, and perhaps getting new kinds of grapes? As you may know, the produce of the seeds of most fruits is seldom like that of the parent. The seed from a red, tart apple, like the Spitzenberg, may yield a white, sweet variety. The pit from a good peach may give a larger, earlier kind; and so with the seeds of many other fruits. If our young readers will take pains to plant the seeds from the apples, pears, grapes, etc., which they may eat this year, some new varieties may be produced, superior to any now known. It would be strange indeed if some excellent sorts were not obtained among the hundred of thousands of members of our circle; and what a life-long pleasure it would give to a boy or girl to have thus been instrumental in adding to the enjoyments of the world. It would be unwise to feel at all certain of making even a small fortune from experiments of this kind, as perhaps not one in a thousand seeds would produce superior fruit, although there might be success upon the very first trial. He who does all he can to benefit the world, even though he fail, *is worthy of just as much praise* as he who does no more, but chances to succeed. Perhaps next month we may be able to give some hints that will make it less difficult to obtain the desired result.

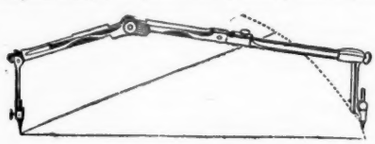
Useful Play—The Game of Proverbs.

The following is one of that innocent kind of amusements, which, if rightly used, not only afford recreation, but tend to develop the intellectual faculties as well. To make this game interesting, there should be half a dozen or more persons to take part—the more, the better. One of the company is sent from the room, and while he is out, some familiar proverb is selected, as, for example; "It never rains but it pours." Then a word of the proverb is given to each one of the party, in the order in which they sit; thus, the first must remember the word, *it*; the second the word, *never*; the third, *rains*, and so on until the whole of the words are distributed. When this is arranged, the absent person is called in, and beginning with the first player, he puts one question (any question he may choose) to each of the company in turn, and each player in his answer must introduce his word of the proverb. Thus, for example, he asks the first, "Is the proverb a common one." The answer might be "*It* is often heard." To the second player, "Will you help guess it?" "*Never* if I can help it," would be an appropriate reply. To the third, "What are you thinking about?" *Answer.*—"I was hoping it might not *rain* to-morrow"—and so on, through the whole party. The questioner is required to find out the proverb, from the answers which are thus given. If he can not discover it after going around twice, he must leave the room again, and another proverb is selected for him to guess at. When he is successful, he sends out the person whose ingenious answer enabled him to detect the proverb.—If there are more players than words in the proverb, then the sentence is distributed twice; thus supposing there were ten persons and seven words, the eighth person would have the first word of the proverb, the ninth would have the second, the tenth the third, and then the first player would at his second examination have to give the fourth word, and so on until the whole was finished. Or if there are ten words and only seven players, then the first player at his second examination must give the eighth word, and so on. In either case the questioner is to have the privilege of asking for information until all the words have been given to him twice, before giving it up



Premium Drawing Instruments.

The above engraving represents the interior of the neat, polished rosewood box containing the drawing or draughting instruments announced as premium *aa* in the table. The two semi-circles really belong behind the top cushion, which is arranged to open. Each piece is fitted into the velvet cushion. We have not space for a full description of the several pieces and their various uses. They are of polished brass and steel. The left hand semi-circle is brass, and the right hand one is of transparent horn, so that when laid upon paper, lines, angles, etc., can be seen through it. The dividers, No. 1 and No. 3 have socket joints and binding screws to receive 4, 6, 7, 8 and 9, for various purposes. Thus: by combining part of No. 1 with 4, 7 and 9, we get the long sweep with steel point and pencil point shown below.—No. 5 (with



ivory handle) and 6 and 8 can be used with ink, either alone, or combined with 1 or 3.—No. 7 and 9 have sockets for pencils, to be used in connection with 1 or 3. The pivots and sockets match, so that a great number of combinations and extensions can be made for drawing all kinds of lines, circles, etc. No. 11 is a boxwood graduated rule.—No. 10 is a double-pivot screw-driver to tighten or loosen the hinge joints of 1, 2 and 3. Taken altogether, this is the most convenient and neatest set of drawing instruments we have seen for the price. We wish every boy and girl among our readers could have a set, not merely to amuse themselves with, but to cultivate a taste and habit for plotting and planning. We propose to all who may secure a set as a premium, to send us a plan of their several homes, farms, gardens, and houses, drawing them to a regular scale of a given number of feet or rods to the inch. We have a few sets yet on hand for premiums, and 100 more sets will arrive from Paris during January. If still more are wanted, they will be ordered. For terms, see premium table in the next column.

PREMIUMS for 1864.

(Last Publication in Full.)

There are certain easy-go-long Editors, who don't want to be troubled with giving premiums—and their editorial work is on a par with their business. They want their subscribers to do the writing, and they publish anything and everything, without the laborious care and investigation required to issue a well edited, reliable paper. They hitch on to their publications the name of some State, and then press upon the people of that State the duty of "sustaining their own paper." For the time expended in canvassing for them, they offer the pay of "a consciousness of working for the good of the cause." Jealous of the fact that a majority of reading farmers of their own neighborhoods even, have the discernment to go where they can get the best paper for the least money, they fall to picking flaws in the way their more enterprising cotemporaries do business.

Why can not these cotemporaries be easy, and go on in their own way, if they like that best, and not be trying to put themselves highest by pulling others down below them. We like our own way of doing business, and the people seem to like it; so we shall keep on—keep asking people to work not only for the "good of the cause," but also offering prizes to those who take time and trouble required to raise large clubs. As we have before stated, the simplest, easiest and best way to do so, is to offer specific Premiums of good articles for a definite number of names. Owing to the special goodwill of manufacturers, publishers, etc., and to some advertising arrangements we are able to offer *much larger* premiums in this way than in cash. There is no "catch" in our mode—no fine premium to the one sending in the largest list of names, leaving all others "out in the cold," though they may have worked just as hard, and obtained *almost* as many subscribers. The canvasser knows just what he or she is working for, and that the remuneration does not depend upon what some other unknown party may be doing.

In proof of the real value of these articles, and of the satisfaction they give, we will state the fact, that many hundreds of persons secured one or more of them last year, through our premium offers, and they were so well pleased with them that at least *nine-tenths of the same persons* are now at work to get other articles this year, and large numbers have already attained the coveted prizes.

We do not pretend to give an article costing $2, and throw in the paper for a year, all for $1. We offer no article of inferior quality or value. The premiums are all useful and desirable, and cheap at the prices named. We repeat that *Every article offered is just what it purports to be, and nothing is second-hand, or of poor make or quality, or kind; We intend in all cases to deal fairly with every one.* We invite all to make an effort to get one or more of the premiums described below, and thus do good to others in circulating the paper, and get paid for the work; *hundreds* have already done so during the past month.

Take Notice! *We can not afford space to republish the following descriptions in full, after this first number of the volume. Please read carefully through what is said below, and preserve the descriptions for future reference.*

Table of Premiums for 1864.

Open to all—No Competition.

Names of Premium Articles.	Price of Premiums.	Names at $1 each.	Names at 80 cts. each
Good Books—*See terms below* *			
A—American Cyclopedia (Appleton's New)	$36 00	130	250
B—Best Family Clothes Wringer	$7 00	19	45
C—Nonpareil Washing Machine	$16 00	40	90
D—Sewing Machine, (Wheeler & Wilson)	$45 00	98	195
E—Sewing Machine, (Wilcox & Gibbs)	$40 00	82	185
F—Woodruff's Mercurial Barometer	$8 00	20	63
G—Woodruff's Mercurial Barometer	$12 00	30	94
H—The Aquarius	$10 00	25	67
I—Five Octave Melodeon (best)	$90 00	190	350
J—Four Octave Melodeon (best)	$60 00	130	250
K—Seven back Volumes Agriculturist,	$8 68	28	64
L—Six do do do	$7 44	25	58
M—Five do do do	$6 20	22	49
N—Four do do do	$4 96	19	42
O—Three do do do	$3 72	16	38
P—Two do do do	$2 48	13	24
Q—One do do do	$1 24	..	13
R—Jacob's Portfolio Paper File	$1 50	..	17
S—Osborn & Hodgkinson's Paints	$1 50	..	17
T—Premium Cylinder Plow	$10 00	33	78
U—Eagle Plow No. 20	$9 25	30	69
V—Hay and Straw Cutter (best)	$9 00	28	63
W—Steel-tooth Cultivator (best)	$7 50	25	58
X—Family Lard and Wine Press	$7 00	24	54
aa—Case of Drawing Instruments	$5 00	21	44

Postpaid, Inbound.

No charge is made for packing or boxing any of the articles in this Premium List. The books and the Premiums K, to S, inclusive, are DELIVERED *to any part of the United States and Territories, free of all charges. The other articles cost the recipient only the freight after leaving the manufactory of each.* ☞ *Every article is new and of the very best manufacture.*

The names (with money for each,) can be sent in as fast as gathered, so that the subscribers can begin to receive their papers. The premium will be paid to any one as soon as his list is completed. **But,** *let it be distinctly noted, we can reckon for premiums* ONLY *those names which are marked as for Premiums, when they are sent in.* All the separate names thus sent and marked as for premiums, are at once recorded, so that we can immediately turn to any canvasser's list, and see how it stands.

Premium clubs need not necessarily be all at one Post-Office. Each list ought to contain a fair proportion of new names, for it is to bring the paper before new subscribers, that the premiums are in part intended.

To avoid confusion, please send in the exact amount with each list of names. In special cases the whole sum for a premium list may be forwarded, and the premium be received at once—the names to be sent in afterward.

☞ All names sent in now, get the great Strawberry plants. Note that 5 cents extra are needed if the "*Agriculturist Strawberry*" plants are to go by mail. This will, of course, be paid by the subscribers themselves.

Descriptive Notes on the Premiums.

*** Books.**—Any person sending 20 or more subscribers, may select from our Book List (page 27) to the amount of 10 cents for each name sent in at the club price of 80 cents, or to the amount of 30 cents for each name at $1. (No books sent for less than 20 names). The premium books will be *delivered*, by mail or express anywhere in the United States, or to the Border of the British Provinces, *free of all cost.* Many a Farmers' Club has, by means of this premium, obtained a good Library.

A—Appleton's New American Cyclopedia.—This magnificent work is now completed, and ready for immediate delivery. It consists of 16 heavy volumes, averaging 800 large two column pages, or in the whole work, 12,804 pages! (The books fill up over a yard of shelf-room.) *It is in reality a complete library of itself,* embracing full information upon every topic of human knowledge, alphabetically arranged for convenient reference. The subjects discussed number over *twenty-five thousand!* It is hardly possible to name anything upon which pretty full information may not be readily found in the Cyclopedia. Many who can not purchase the work may be able to obtain it through our Premium offer. It is worth a year's effort in raising subscribers, though many may get 130 names in a brief time.

B—Best Clothes-Wringer.—This is a most excellent Household Implement, which should be in every family. It can be set upon any form of tub, and by turning with the right hand and picking up the garments with the left, they are pressed rapidly and easily between two elastic rollers, and drop out into a basket, quite as free from water as they can be wrung by the hardest twisting by hand. Every lady knows that hand wringing is really harder upon the arms and shoulders than even the washing; while the twisting stretches the fibers with lever power, and hastens the wearing out. All this is avoided by the Wringer, which is in truth a *strength-saver*, and a *clothes-saver*. We have had one in use for nearly four years; it is as good as ever, and has paid for itself many times over. A child can with this readily wring out a tub-full of clothes. Our Premium Wringers are the family size, of the No. 2 "Universal" and are provided with *cogs*, and with springs, so that they will wring equally well any article from a blanket to a baby's stocking. The cogs are an indispensable addition to the best and safest wringers. The Wringer weighs only 15 lbs., and can be carried by hand, or sent by express, or freight to any point, and is ready for instant use on removing the light packing box.

C—Nonpareil Washing Machine.—The best recommendation we can give of this, is, that while we have tried fifteen or twenty kinds, this is the only one that our "help" continue to use without being *required* to do so. It acts somewhat like the old "fulling mill;" the clothes are put into the hot water, and beat by two pounders which constantly turn them over. The beaters are moved alternately by a crank, provided with balance wheel which adjusts the force required so as to make the turning easy. Take it all in all, the Nonpareil is the best Washing Machine we have found. If we find and prove a better one, we shall put it in our list, for anything that helps to reduce the hard work of washing day, is a godsend. The machine can go as freight, or by express, to any part of the country.

D—E—Sewing Machines.—We need not enlarge upon the benefits of Sewing Machines. It is no exaggeration to say that a woman can in a day do *ten times* as much ordinary sewing with a machine, as she can do by hand, The interest on a $50 Machine is only $3 to $4 a year, which is a small consideration compared to its advantages. Five hundred families ought to be supplied through our premium list *this year*. At least 80 to 100 copies of the *Agriculturist* ought to be taken in every town, and would be if some enterprising man or woman would go round and gather them. Two or three ladies might join their efforts, and get a machine for use between them. We offer two kinds of Machines, both varieties of which we have had in use for several years, and with great satisfaction. They are both supplied with the Hemmer, and are sent out with full instructions for use.—The **Wheeler & Wilson Machine**, we have used during five years, and can bear full testimony in its favor. More of these machines are sold and used, we believe, than of all the other good kinds together, which is a strong proof of the satisfaction they give.—This sews with a double thread, both sides of the fabric showing the same stitch.—The **Wilcox & Gibbs Machine**, we have used for over three years, and for most kinds of sewing it is excellent. It is very simple in its operation and can be worked by those who have the smallest amount of mechanical skill. It can be used for most kinds of sewing, and may well be adopted generally, at least where the higher priced machines can not be afforded.—For every kind of sewing, especially where the same stitch is required on both sides, we prefer the Wheeler & Wilson.

F—G—Woodruff's Mercurial Barometer.—This is conceded to be the best and cheapest instrument for general use, which is now offered to the public. The peculiar form of mercury cup invented by Mr. Woodruff, renders the instrument far more portable than any thing previously made. The *safe delivery* of every instrument given by us as a premium, is warranted by the manufacturer (Charles Wilder, Peterboro, N. H.), when to be sent within 1,500 miles. The instruments are beautifully made, are about 3 feet long, and are sent direct from the factory, with no expense save the express charges. We offer two forms which differ mainly in the style of case, both being supplied with *Thermometer* and *Vernier*. The $12 form is of course more ornamental, and the more desirable instrument, though either of them is highly valuable. A barometer is to farmers or others on land, what it is to sailors at sea—an indicator of the weather to be looked for. There are many times every year when the indications of the barometer in regard to the weather will often be of more value than its whole price, while the interest on its cost would be less than half a dollar a year. The *habit* of observation, and of scientific study cultivated in children where a Barometer is used, is important.

H—The Aquarius.—This is an excellent little portable force-pump, useful in many ways. One can take this instrument in his hand with a pail of water, and throw a considerable stream to any point where a fire may be breaking out, and do more to quench it, than he could with a dozen pailfulls dashed on, even if the fire could be reached. We have thrown water from the ground up against the third story windows of a house. The Aquarius is very useful for watering gardens, for washing windows, carriages, etc., etc. It is provided with rubber suction pipe, to draw water from a pail, tub or bucket, and an ejection pipe having both a nozzle for throwing a stream, and a rose or sprinkler. It has also an air chamber for giving a constant stream. It is a handy instrument, for every household, aside from its use as a fire engine with which many incipient fires have been stopped.

I—J—Melodeons.—None need to be told of the pleasure given by a good Melodeon in a household, or of its utility in the Week Day and Sabbath School Room, and the

Church. "Music hath charms to soothe even a savage breast," and we hesitate not to say that a benign influence is exerted upon every house and school room where a Melodeon or other good musical instrument is found.—We offer two sizes in our list above, and those of a different price may be selected for a proportionate number of subscribers. (For sizes, style, prices, etc., send a stamp to George A. Prince & Co., Buffalo, N. Y., and get one of their illustrated descriptive Catalogues, which will be sent free). We have used one of these Melodeons during four years past, and it continues to give the highest satisfaction. It has not been tuned or otherwise repaired in all that time. The premium instruments will be shipped direct from the manufacturers at Buffalo, ready boxed. They can go by railroad, steamboat, express or otherwise, as desired by the recipient. ☞ It is easy for Churches, and both Week Day and Sunday Schools to unite their efforts and secure a good melodeon.—Many have done so already. Note the *present* prices.

K—Q—Seven Volumes of the Agriculturist.—Here is a *whole Agricultural, Horticultural, and Household Library*, embracing also a large amount of interesting reading for Children and Youth, and thousands of instructive and pleasing engravings. Each volume contains more printed matter than half a dozen dollar books of the usual size. There are in each volume from two to four thousand articles and condensed items, among which every reader will find something useful to himself and family. We send them post-paid (as in the above table,) in new clean numbers, printed from stereotype plates as needed. The last number of each volume contains an index to the whole volume. (Any person preferring them bound, can receive them in this form, neatly done, at 65 cents extra per volume, for binding and extra postage—or at a cost of only 25 cents per volume if called for, or sent by express, or otherwise, so as not to be pre-paid. Let every one selecting this premium be sure to name what volumes are desired, or how many of each, as duplicates of any volume can be chosen if preferred.—We can only supply from volume 16 to volume 22 inclusive.

R—Best File for the Agriculturist.—Jacob's Portfolio file, made just to fit the *Agriculturist*, with the name of the paper gilded on, is exceedingly convenient. It is a neatly embossed or stamped cover, made so that each successive number of the paper can be inserted in a minute, when it is strongly held in. The numbers thus fastened together are as convenient as a bound book. When one volume is completed, it can be removed and stitched together, and the numbers of a new volume be inserted. A single cover will answer for a dozen or twenty successive years. It is without doubt the most perfect paper file made. Sent post-paid.

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The Markets.

AMERICAN AGRICULTURIST OFFICE. }
New-York, Friday Morning, Dec. 18. }

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
24 days *this* m'th	578,000	3,159,000	260,000	88,000	565,000	2,741,000
27 days *last* m'th	550,000	3,034,000	531,000	21,000	607,000	2,102,000

SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*
24 days *this* month,	373,000	2,772,000	2,146,000	33,500	350,000
27 days *last* month,	499,000	3,113,000	3,018,000	26,000	588,000

2. *Comparison with same time last year.*

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
24 days 1863	573,000	3,159,000	260,000	88,000	565,000	2,741,000
24 days 1862	667,000	3,954,000	2,787,000	6,850	298,000	809,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
24 days 1863	373,000	2,772,000	2,146,000	33,500	350,000	
24 days 1862	418,000	3,605,000	3,216,000	53,250	312,000	

3. *Exports from New-York, Jan. 1, to Dec. 17.*

	Flour. Bbls.	*Wheat. Bush.*	*Corn. Bush.*	*Rye. Bush.*	*Oats. Bush.*
1863	2,434,736	14,867,056	7,526,149	416,369	125,806
1862	2,989,619	24,890,341	11,531,819	1,099,656	172,922

4. *Receipts of Breadstuffs at Albany, by the New-York Canals from the opening of navigation May 1, to Dec. 12.*

	Flour, bbls.	Wheat, bus.	Corn, bus.	Rye, bus.	Barley, bus.	Oats, bus.
1863	1,546,600	22,069,400	20,560,100	423,300	3,181,300	12,354,800
1862	1,710,800	32,548,000	23,419,000	755,200	2,290,000	6,014,500

CURRENT WHOLESALE PRICES.

	November 18.	December 18.
FLOUR—Super to Extra State	$5 60 @ 6 65	$6 10 @$6 90
Super. to Extra Southern	7 20 @11 00	7 60 @11 00
Extra Western	7 00 @11 50	7 60 @11 50
Extra Genesee	6 70 @ 9 00	6 90 @ 9 25
Superfine Western	5 60 @ 5 80	6 10 @ 6 80
RYE FLOUR	5 75 @ 6 75	5 75 @ 7 00
CORN MEAL	5 50 @ 6 25	5 70 @ 6 15
WHEAT—All kinds of White	1 60 @ 1 85	1 65 @ 1 85
All kinds of Red	1 36 @ 1 57	1 43 @ 1 63
CORN—Yellow	1 09 @ 1 10	1 32½@
Mixed	1 09 @ 1 10	1 32 @ 1 33
OATS—Western	85 @ 86	91 @ 92
State	85 @ 86	90 @ 90½
RYE	1 20 @ 1 25	1 25 @ 1 34
BARLEY	1 40 @ 1 58	1 35 @ 1 55
COTTON—Middlings, per lb	86 @ 87	82 @ —
HOPS, crop of 1863, per lb	20 @ 28	20 @ 30
FEATHERS, Live Geese, p. lb	57 @ 60	62½@ 65
SEED—Clover, per lb	9½@ 11½	11 @ 11½
Timothy, per bushel	2 50 @ 2 65	2 50 @ 2 85
FLAX, per bushel	2 90 @ 3 10	3 15 @ 3 25
SUGAR—Brown, per lb	11¼@ 14¼	11¼@ 14½
MOLASSES, New-Orleans, p. gl.	50 @ 70	55 @ 70
COFFEE, Rio, per lb	30½@ 33½	33 @ 35
TOBACCO—Kentucky, &c, p. lb	9 @ 28	10 @ 30
Seed Leaf, per lb	12 @ 50	15 @ 55
WOOL—Domestic fleece, p. lb	70 @ 85	70 @ 85
Domestic, pulled, per lb	68 @ 80	65 @ 80
Wool, California, unwashed	50 @ 60	25 @ 37½
TALLOW, per lb	12 @ 12¾	11¼@ 12¾
OIL CAKE, per ton	46 00 @52 00	47 00 @52 50
PORK—Mess, per bbl	16 50 @18 25	18 25 @18 50
Prime, per bbl	11 87½@12 25	12 50 @13 00
BEEF—Plain mess	11 75 @13 50	12 00 @13 75
LARD, in bbls., per lb	11¾@ 12¾	11¾@ 12¾
BUTTER—Western, per lb	19 @ 24	20 @ 26
State, per lb	24 @ 28	26 @ 32
CHEESE	11 @ 15½	12 @ 16
BEANS—per bushel	2 00 @ 3 00	2 50 @ 3 00
Broom Corn—per lb	8 @ 10	8 @ 10
EGGS—Fresh, per dozen	22 @ 27	22 @ 27
Eggs, Limed, per doz	20 @ 21	20 @ 21
POULTRY—Fowls, per lb	10 @ 14	8 @ 11
Ducks, per lb	8 @ 14	8 @ 12
Geese, per lb	10 @ 12	7 @ 10
Turkeys, per lb	10 @ 15	8 @ 12
POTATOES—Dykman, p. bbl	2 50	2 50 @ 3 00
Mercers, per bbl	2 25 @ 2 50	2 25 @ 2 75
Buckeyes per bbl	1 25 @ 1 50	1 50 @ 1 62
Peach Blow, per bbl	1 62 @ 2 00	1 87 @ 2 00
Nova Scotia, per bushel	50 @ 55	50 @ 65
Sweet Delaware per bbl	5 50 @ 6 00	6 50 @ 7 00
TURNIPS—Ruta baga, per bbl	1 00 @ 1 25	1 13 @ 1 25
ONIONS, Red & Yellow p. bbl	3 50 @ 3 75	4 50 @ 5 00
CABBAGES, per 100	4 00 @ 8 00	6 00 @10 00
CARROTS, per bbl		1 50 @ 1 75
BEETS, per bbl		2 50 @ 2 75
DRIED APPLES, per lb	5 @ 9	5 @ 9
DRIED PEACHES, per lb	22 @ 25	24 @ 26
DRIED RASPBERRIES, per lb	23 @ 24	24 @ 25
APPLES, chce, per bbl	3 50 @ 4 00	3 50 @ 4 00
Apples, mixed lots, per bbl	2 50 @ 3 00	2 50 @ 3 00
Apples, River, per bbl	2 00 @ 2 50	2 00 @ 2 50
PUMPKINS, Cheese, per 100	8 00 @10 00	12 00 @18 00
SQUASHES, Marrow, per bbl	2 50 @ 2 75	4 00 @ 4 50
Hubbard, per bbl	2 50 @ 2 75	4 50
CRANBERRIES, per bbl	8 50 @11 00	8 00 @10 00
PIGEONS, Wild, per doz	90 @ 1 25	90 @ 1 25
PRAIRIE CHICKENS, per pair	60 @ 80	
QUAIL, per doz	1 50 @ 2 00	50 @ 1 50
PARTRIDGES, per pair	50 @ 1 00	50 @ 75

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THE TRIBUNE FOR 1864.

THE NEW-YORK TRIBUNE, first issued April 10, 1841, has to-day a larger aggregate circulation than any other newspaper published in America, or (we believe) in the world. Compelled a year since to increase the price of its several issues, or submit to the pecuniary ruin of its proprietors from the very magnitude of its circulation, it has probably since parted with some patrons to whom its remarkable cheapness was a controlling recommendation; but others have taken their places, and it has now more than Two Hundred Thousand subscribers and regular purchasers—an excess of at least Fifty Thousand over those of any rival. And this unprecedented currency it has achieved by very liberal expenditures in procuring early and authentic intelligence, by the fearless expression of convictions, by the free employment of ability and industry wherever it might contribute to excellence in any department of our enterprise, and by unshrinking fidelity to the dictates of Justice, Humanity, and Freedom.

By very large outlays for early and authentic advices by telegraph and otherwise from its own correspondents with the various armies of the Union, and by special efforts to furnish such information respecting Markets, Crops, new discoveries or improvements in Agriculture, &c., as must specially interest farmers, we have assiduously labored to make a journal calculated to meet the wants and subserve the interests of the Producing Classes. That end we have at least measurably attained; for no other newspaper exists in America or Europe which is habitually read by nearly so many farmers and their families as is THE TRIBUNE to-day. We shall labor to increase both the number and the satisfaction of this by far the most numerous class of its patrons.

During the existence of the Whig party, this paper supported that party, though always sympathizing with the more liberal, progressive, Anti-Slavery "wing" thereof. When new issues dissolved or transformed old organizations through the spontaneous uprising of the people of the Free States against the repudiation of the Missouri Restriction, THE TRIBUNE heartily participated in that movement, and was known as Republican. When the long smoldering conspiracy to divide and destroy our country or reduce it entire to complete abasement to the Slave Power culminated in overt treason and rebellion, it naturally, necessarily regarded resistance to this conspiracy as paramount to all other considerations, and devoted all its energies and efforts to the maintenance of our Union. In every great controversy which has divided our country, it has been found on that side which naturally commands the sympathy and support of the large majority of school-houses and the decided minority of grog-shops, and so doubtless will be to the last.

Ardently desiring and striving for the early and enduring adjustment of our National distractions, THE TRIBUNE leaves the time, the nature and the conditions of that adjustment implicitly to those lawfully in authority, confiding in their wisdom and patriotism, anxious to aid them to the utmost in their arduous responsibilities and not to embarrass them even by possibility. Firmly believing in the Apostolic rule—"First pure, *then* peaceable"—holding that the total and final extirpation of Slavery is the true and only absolute cure for our National ills—that any expedient that stops short of this can have but a transient and illusory success—we yet propound no theory of "reconstruction" and indorse none that has been propounded by another—neither Sumner's, nor Whiting's, nor any of the various Copperhead devices for achieving "Peace" by surrendering the Republic into the power of its traitorous foes—but, exhorting the American People to have faith in their Government, to reinforce their armies and replenish their treasury, we believe that, if they but do their duty, a benign Providence will in due time bring this fearful struggle to such a close as will best subserve the true greatness of our country and the permanent well-being of mankind.

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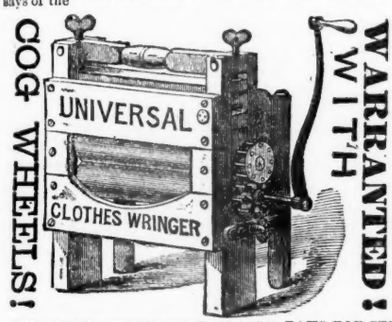

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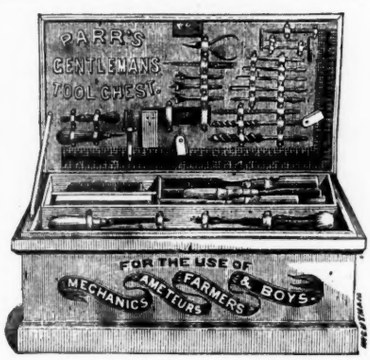

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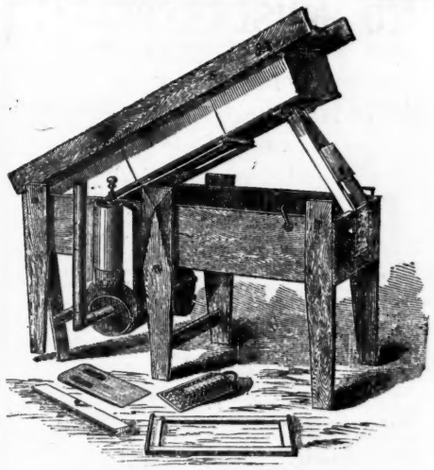

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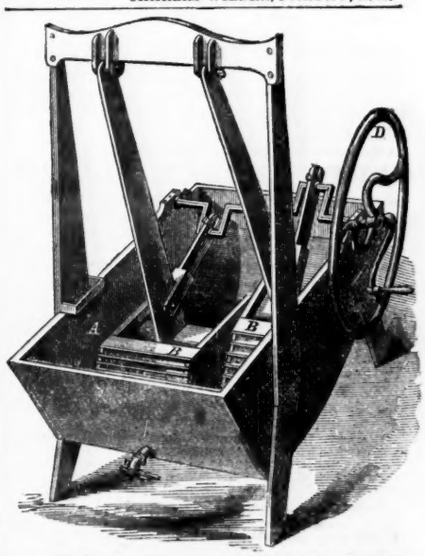

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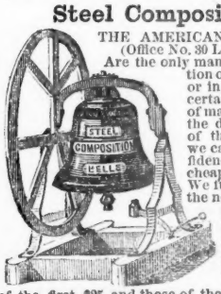

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☞ We respectfully solicit the kind aid of every reader of this Journal, in introducing it among his friends and neighbors. The price of paper keeps up to nearly double former rates, which greatly increases the cost of publication. It will be a hard year for us, if we adhere to the old terms, as we desire to do; but a full list of subscribers will help through the expenses. Every name will aid in this direction, while every copy introduced into a neighborhood will tend to the awakening of thought, and promote improvement, not only on the part of those who read it, but will indirectly benefit all others whom they influence by their words or example.

Good pay, in the form of premiums, is offered on page 25, to those who devote time to making up and forwarding large clubs. But, aside from these inducements, we invite each reader to forward a name or more. We will, at least, be thankful to each one who does this, and will return the favor by the making the paper as good as we can.

The Strawberry-Plant Distribution—Explanations to New Subscribers.

Many thousands of new subscribers are now arriving, and sundry questions are asked by them, concerning the plants to be distributed. We therefore explain in this first number of the Volume: Last Summer a remarkable new strawberry plant was first brought to notice, by the aged Seth Boyden, the noted inventor of Patent Leather, Malleable Iron, etc. It attracted great attention, from its wonderful size, its apparent productiveness, its good flavor, and beautiful scarlet color extending to the center. Within half an hour of its first being seen, the Publisher of the *Agriculturist* conceived the plan of securing all the plants, (but few in number,) and multiplying them for general free distribution among his subscribers for 1864. A high price was at once paid for the plants, and much labor and expense have been, and are being devoted to their care and culture. Leading, experienced cultivators, who came in afterwards, were so impressed with the appearance and promise of the new plants, that they offered large sums for the monopoly and sale of them but the original design of the Publisher has been adhered to, though he could sell out the plants to-day for enough to buy a good farm.

If the plants prove as good as they promise, our readers will get the first benefit, and the public will soon be supplied through them. If they should not prove to be *all* that is confidently anticipated, no one will be the loser, except the publisher, as the cost to each recipient, is only *five* cents (in addition to their subscription at single or club rates) which barely covers the postage and oil-cloth when they are to be sent by mail. Having distributed over 50,000 other strawberry plants, to all parts of the country, through the mail, and with very rare failures, we doubt not that these will go safely in the same way.

Over an acre of ground is now planted with them, and it would have been thoroughly covered with runners but for the unprecedented drouth last Autumn. As it is, we shall at least have several tens of thousands of plants to distribute the coming Summer, and we *expect* to supply every applicant on our books this year, in time to get the plants well started before the season closes. The distribution will be in the order the names of applicants stand upon our subscription books for Volume XXIII, beginning with those entered last July, and continuing on until *all* are supplied. Those applying in the future will be supplied as certainly as those in the past, but must wait their turn. If through a bad season or otherwise, we cannot get plants enough this year for the last applicants coming, in they will be supplied in order, the next Spring. All applicants now on our books, and many thousands more, will certainly receive the plants this year, Providential casualties only excepted.

ALMANAC FOR 1864.

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	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30	31	..	..	..	..	..
Nov.	..	..	1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	..	..	..
Dec.	..	..	..	..	1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31

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